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# HYDRO News



HYDRO TECHNICIAN

FEB 2 1943

VOL. 30 - 31 (1943-1944) JANUARY, 1943

NUMBER 1-12



# Your HYDRO

## Answers the Challenge!

### WARTIME POWER DEVELOPMENTS IN ONTARIO

- To meet the power needs of Ontario's war industries your Hydro has increased the supply of electricity in the last four years by over 760,000 h.p.

This has made a tremendous contribution to the war effort, providing our highly electrified factories in Ontario with the necessary power to produce great quantities of weapons for our fighting forces.

The development of new power sources is continuing—in the wilds of Northern Ontario a huge diversion program, that will reverse the natural flow of water, is nearing completion. In other parts of the Province additional power projects are nearing the final stages of construction.

The splendid co-operation of the citizens of Ontario in conserving electricity during the recent months has contributed greatly to our war effort and is thankfully acknowledged. The shortage of power, however, is still critical and the need for conservation continues.

Still more power is needed to produce still greater supplies of war weapons and materials. When the victory is won, that same power will be available to contribute to peacetime progress in our industrial, commercial and home life.

### INCREASE IN POWER FROM MOST RECENT DEVELOPMENTS

1. Plant nearing completion to provide 65,000 h.p.
2. Mid-Ontario plant supplying 10,000 h.p.
3. Hundreds of miles of new Transmission Line.
4. Rapid progress on new diversion program.
5. 54,000 h.p. plant into production last summer.
6. 230,000-volt Transformer Station to distribute power.

O.M.E.A. and A.M.E.U.

Annual Meeting

Toronto, February 9th and 10th

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



# HYDRO News

*formerly The BULLETIN*

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

PUBLISHED BY THE HYDRO-ELECTRIC  
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AND CHIEF ENGINEER.

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EDITOR: WILLIAM RATTRAY.

SUBSCRIPTION PRICE: \$2.00 PER YEAR.

The Front Cover



Taken by Alan Walker, To-  
ronto photographer, and  
bearing the title "Hydro  
Technician," the photograph  
on this month's front cover  
shows Mrs. Adeline Smith  
at work in the H.E.P.C.  
laboratory. She and a num-  
ber of other ladies, who are  
doing men's jobs, are en-  
gaged in testing between  
150 and 200 different types  
of wire and cable to deter-  
mine their efficiency under  
varying weather conditions.

Volume 30

January 1943

Number 1

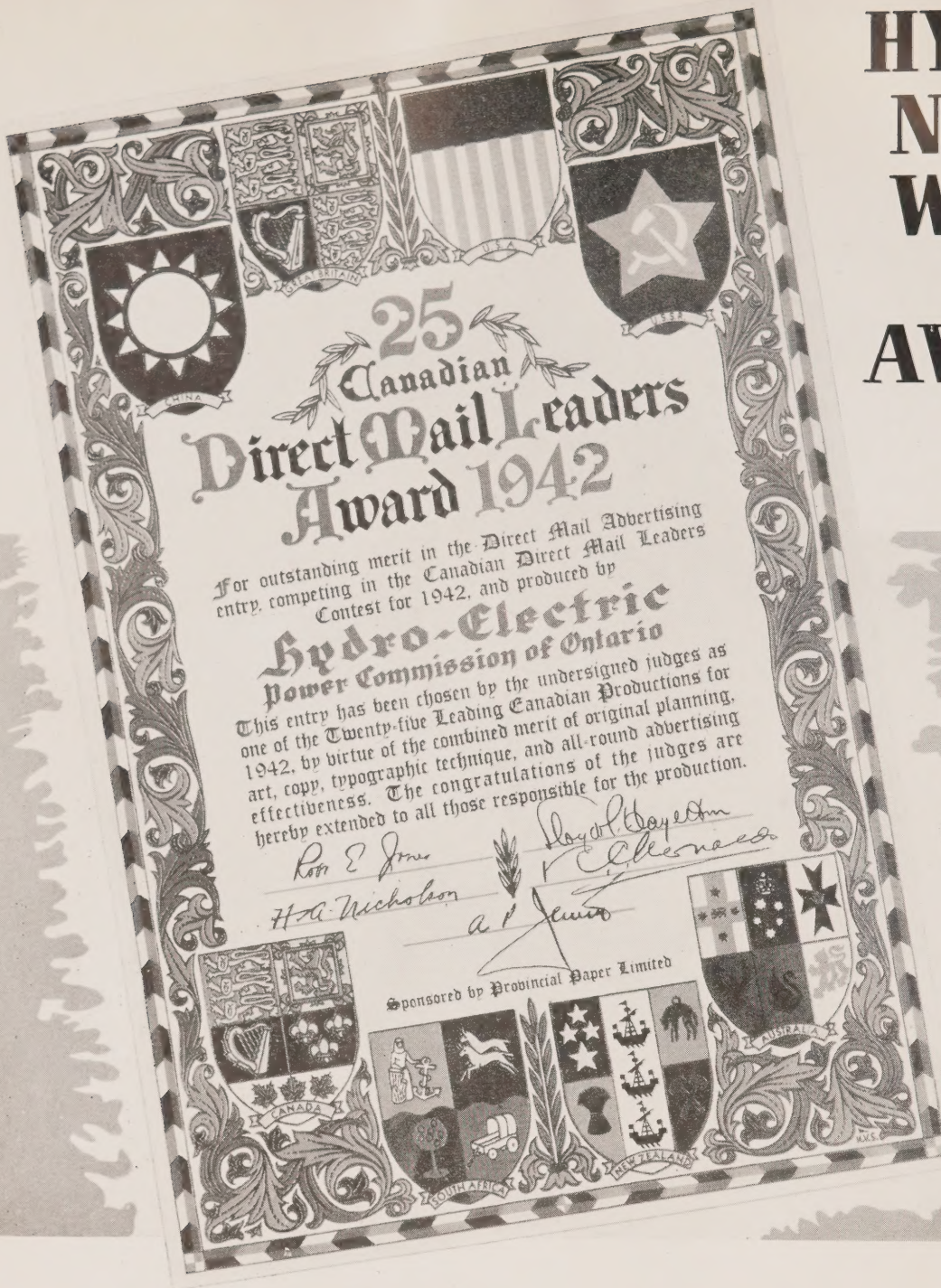
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# HYDRO NEWS WINS AN AWARD



**F**OLLOWING the announcement in the November issue of Hydro News that this publication had received one of the five awards in the house organ classification of the Canadian Direct Mail Leaders Contest for 1942, a number of readers have asked for a description of this award.

To describe it in words in a way which would convey a true impression to these readers seemed to present certain difficulties. Under the circumstances, therefore, it was felt that these enquiries might be regarded as a polite "mandamus" which justified a reproduction of the award, shown above.

The original certificate is 18 inches deep and 12 inches wide, and is reproduced in seven or eight colours, while the 1942 motif features the crests of most of the United Nations.

The contest, which has been sponsored by the Provincial Paper Company since 1937, is divided into five classifications of Canadian creative work. Five awards are made in each group in accordance with the decisions of judges who are prominent in the advertising and publishing fields. Prize-winning entries are announced and displayed at the convention of the Association of Canadian Advertisers.



## **O.M.E.A. And A.M.E.U. Contribute To Hydro Progress**

**C**ONSTRUCTIVE planning and co-operation in meeting new problems created by the war have characterized the fine service rendered by officers and members of both the Ontario Municipal Electric Association and the Association of Municipal Electrical Utilities. The wartime work of these associations has received great impetus from the progressive spirit, enterprise and vision which found expression in their peacetime activities.

During the past year, Hydro has been called upon to meet urgent and unprecedented demands for power required in the production of essential war materials and equipment. The Dominion Power Controller found it necessary to impose restrictions, while the H.E.P.C. had to call upon domestic consumers in power shortage areas to voluntarily conserve electricity. The fact that results have been highly gratifying reflects not only the loyalty and patriotism of consumers of electricity but also the splendid work and co-operation of local municipal Hydro officials and engineers.

These are the men who will be meeting in Toronto on February 9 and 10 for the winter convention of the O.M.E.A. and the A.M.E.U. Timely and interesting messages by Kenneth A. Christie, K.C., and Vernon A. McKillop, the respective presidents, appear in this issue of Hydro News and direct attention to the activities of these organizations during the past year. The programmes, also published in this issue, show that many important subjects will be discussed before the sessions close.

Conventions of this character are far-reaching in their value for they not only contribute much to the welfare and progress of Ontario's great public ownership enterprise, but they foster an esprit de corps and closer understanding among the men who live with and know Hydro.

## **Institutional Publications Have A Wartime Job To Do**

**C**ANADA'S war effort is making an impact upon the lives of all Canadians. It embraces the production of many diversified types of industries, and is represented by the individual efforts, contributions and sacrifices of employees in all trades and professions. While specific branches of this effort are covered in a graphic and general way by the daily press and by national magazines, it is the duty of each institutional publication, such as Hydro News, to tell the story its own organization and employees have to do and to show how that job is related to the war programme as a whole.

The fact that institutional publications have a definite wartime role was strongly emphasized recently by Leonard J. Knott who holds a key position with the War Information Board at Ottawa. Mr. Knott's comments—voiced in blunt, unvarnished language which left no room for doubt concerning his personal convictions—were made at a meeting of the members of the Canadian Association of Personnel Publication Editors.

While Mr. Knott may have jolted many members of his audience by his outspoken criticism and candour, his address was constructive and very much to the point at a time when it is essential to marshal our total resources to fight a total war. For its part, Hydro News fully realizes its responsibilities during these momentous days, and will continue to carry out these responsibilities.

The great majority of Canadians have recognized the vital issues at stake in this global struggle. To a few, however, the war—although in its fourth year—is still something which is remote but for rationing of certain goods and priorities which have compelled them to make adjustments in their demands.

It takes just a little imagination to get the war in its true perspective. Suppose it had been Ottawa, Hamilton, Toronto or some other Canadian city instead of London or Stalingrad?



# *Hydro's in the Boat Race*



Splash! Another minesweeper glides off the ways at a Toronto shipbuilding yard. She's the H.M.S. Octavia.

**By A. M. PERE**

**T**HERE'S a different kind of boat racing going on these days. It completely eclipses hundred-year-old annual Oxford-Cambridge 4¼-mile rowing classic from Putney to Mortlake on the Thames. And it's not the race for the old "mug" that eluded the "Shamrocks" which the late Sir Thomas Lipton tossed across the Atlantic so many times in an effort to catch favorable winds in their sheets off Newport, R. I.

This is a race of war boats. Not war canoes—unless someone should have the idea that the 200- to 10,000-ton craft that are sliding down the ways of Canadian shipyards these days are canoes. They're certainly not bound for any sleepy lagoons, but for the heaving, sub-infested high seas. Vital supplies and men must be transported to many battle-fronts, convoys must be guarded, subs must be sunk and mines must be laid. This is a race in which no one can lag on his oars. A steady supply of iron, steel, wood, engines and other essential equipment must be kept flowing to our shipyards where boat-builders must keep 'em sliding off the ways if our courageous wartime mariners are to play their full part in hastening victory at sea.

If we lose this race, we lose more than a "mug". We lose everything—call it our democracy, our way of life, our

traditions or what you will. There are those who won their "Blues" at Oxford or Cambridge, but that means little or nothing if each and everyone doesn't earn a "Blue" in this grim race in which all free people must pull in unison against the desperate and unscrupulous crew pitted against us.

In this race of 1943, the shipyards of Ontario are pulling hard and Hydro power is providing the driving force which is helping husky crews of men and women to transform gaunt, skeleton-like frames into sturdy sea-going craft in a fraction of the time it took to build boats in earlier days.

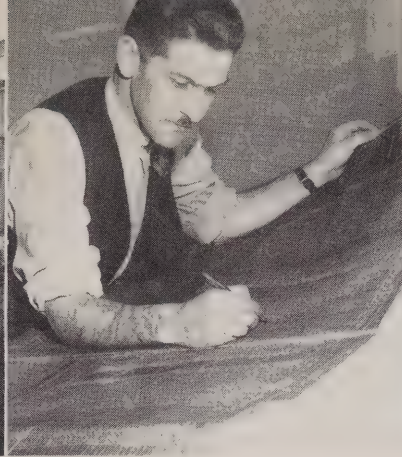
Hydro is required for practically every operation in a shipyard, from the primary use of providing light in the draughting and engineering rooms to the operation of mighty machines in the machine shops. Perhaps the most spectacular of all operations requiring electricity, however, is that of electric welding.

At a busy Toronto shipyard recently Hydro News saw some of these welders in action. The harsh, flickering glare and the hissing, spitting noise of these hefty-looking welding machines seem to capture the immediate interest of all lay visitors to a shipyard. Frequently, you will





Every shipyard worker who could leave his job a few minutes joined in cheering the Octavia's launching.



C. S. Scott, chief engineer at a Toronto yard, checks "offsets" before sending data along to the "loftsmen."



Glasgow-born Sam King, a loftman, is shown standing beside one of the ship models which he made himself.

watch as if entranced, then the welder stops and pulls back a cumbersome, glass-slotted martian-like visor and you find yourself face to face with quite a pretty girl. Times have changed and many male workers at shipyards these days look 'round carefully before expressing themselves if they stub their fingers!

#### Toronto System's Wartime Role

Welding is but one of many important operations involved in building a ship, and to get a general idea of this vital war industry with which Hydro is so closely linked, Hydro News was advised by officials of the Department of Munitions and Supply to take a look at this busy Toronto yard which, along with yards at Collingwood, Midland, Port Arthur and other points in Ontario, is making its contribution to victory.

Toronto itself has the distinction of having the largest municipally-owned Hydro system with a total of more than 150,000 domestic consumers and in excess of 27,000 commercial and industrial users of electricity. It is estimated that upwards of 65 per cent of Toronto's 159,000 horsepower industrial load is used for direct war purposes. The administration and operation of the Toronto Hydro-Electric System is under the capable direction of the following well-known commissioners: Joseph Gibbons, chairman; Kenneth A. Christie, K.C., vice-chairman; and Dr. Fred J. Conboy,

mayor of Toronto, while E. M. Ashworth is general manager and chief engineer, and H. J. MacTavish is secretary and assistant to the general manager.

It is estimated that from September to December, 1942, over the corresponding months of 1941, the Toronto System saved close to 17,000,000 kilowatt-hours of energy as a result of the restrictions imposed by the Dominion Power Controller, and more than 1,225,000 kilowatt-hours as a result of voluntary saving on the part of domestic consumers. In citing statistics for the first nine months and the last three months of last year, one official stated that they indicated a reduction in peak load of approximately 7 per cent as compared to 1941, and a decrease of approximately 12 per cent as compared to the peak load which might have been expected but for conservation resulting from restrictions and voluntary savings. It is also interesting to note that prior to the Power Controller's restrictive order, Toronto had ordered the discontinuance of double-side lighting on certain residential streets. Combining this reduction with the reduction in the street lighting load since the outbreak of the war, the total curtailment is approximately 30 per cent.

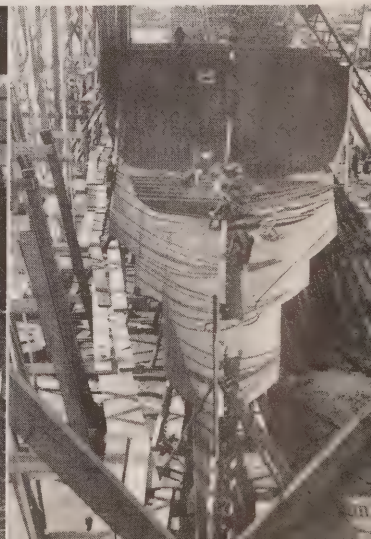
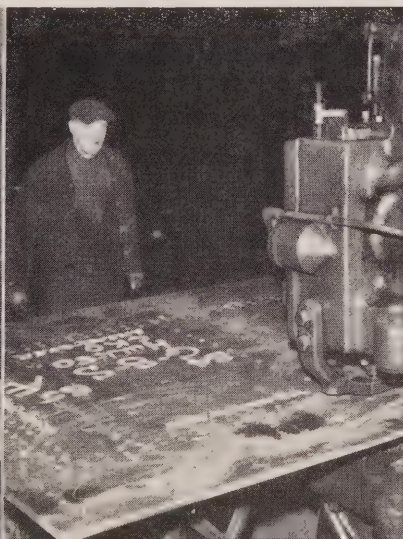
These facts are interesting and reflect the all-out co-operation the Toronto system is giving in meeting increasing demands of expanding war industries. One of

These loftsmen are engaged in making patterns from which steel ship plates will be shaped.

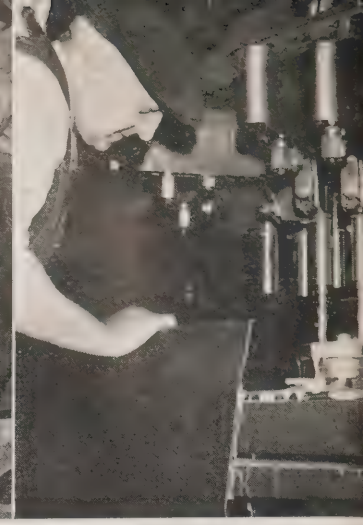
Before plates can be rivetted to a ship each plate must be punched on a press as shown here.

This is not an over-sized vacuum cleaner, but a countersinker used after plates have been punched.

There's plenty of activity going on here as these workers set about the job of erecting bulkheads.







Yes, this is a ship propeller. The worker is welding the A-bracket which supports the bushing.

You've got to look more than twice to be sure that a welder is a "he" or a "she" these days.

"Welding on pre-fabrications" was how a shipyard official described this particular operation.

Here is one of the many machines in a shipyard machine shop. It's a multiple drill in action.

the many important industries in this area is, of course, the shipbuilding industry to which attention is directed in this article.

At the particular Toronto yard visited by Hydro News, more than 3,500 employees are engaged in round-the-clock shifts and in the full-speed-ahead job of turning out vessels as fast as they can be built. It can be readily understood that some impressions of a layman who visits a shipbuilding yard for the first time will bring smiles to the faces of veteran shipbuilders.

### Like Gigantic Jigsaw Puzzle

Everywhere there is activity and noise. Towering cranes move massive parts and plates into place at the side of the ways where the ships gradually take shape, while men and women representing approximately 75 specialized trades carry on their respective jobs. All around are grease, grime, rivets, tools and equipment. It all seems like some gigantic jigsaw puzzle in which odd-shaped parts are strewn here and everywhere. But the men and women engaged in solving this puzzle seem to know just where all these heterogeneous parts fit in and very soon the smooth, trim lines of a ship take shape.

Hydro News learned that the fine job which is being done by this Toronto shipbuilding organization is a striking tribute to friendly international co-operation and

to the ability of four outstanding Americans. When invited to come to this country, these men gave up key executive positions in the United States to help Canada build ships. Known throughout the shipbuilding industry, they have provided a driving force which has made this yard one of the most efficient in the Dominion within less than nine months. At the same time, they have won the admiration and respect of the workers. One of these Americans is H. R. Carlson, works manager, who is a personal friend of Henry J. Kaiser and whose family has been in the shipbuilding business for generations. The others are L. G. Hermann, assistant works manager; E. C. Arnold, general superintendent; and H. V. Mouw, production engineer.

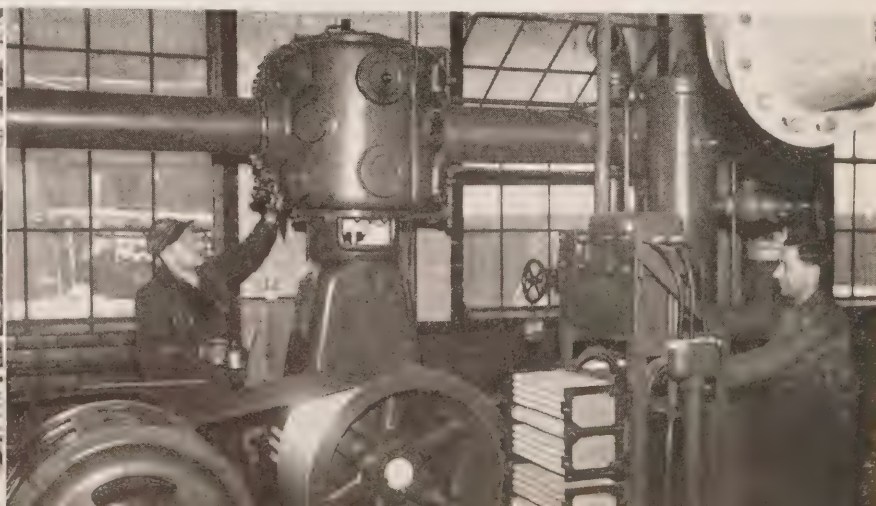
At this yard, Hydro News met P. E. Holmes, who is known officially as the personnel manager—a man who seems to have the faculty of accomplishing a maximum of work with a minimum of effort and who is fully posted on practically every operation in the yard.

"What would you say about the wartime role of Hydro at a shipyard?" Hydro News asked this young, genial and versatile executive. "It's mighty important. Hydro power is used for practically every operation in the shipyard," he replied.

*(Continued on page 21)*

Ninety-five per cent of shipbuilding operations depend on electricity. This worker inspects a transformer house.

The photographer caught these two power house attendants checking and oiling the pressure equipment.





## HYDRO CHAIRMAN SPEAKS AT FIELD FORCE DINNER

**Cites Happy Reminiscences of Earlier Days —  
Annual Meeting of Construction Department  
—Visit War Plant**

**H**APPY reminiscences of the days when he worked with the Hydro construction staff were cited by Dr. Thomas H. Hogg, chairman and chief engineer of the Commission, when he spoke at the annual dinner of the construction department in the King Edward Hotel, Toronto, on December 28.

In his audience, comprising more than a hundred superintendents and representatives from every Hydro construction unit and guests from other departments, Dr. Hogg found many familiar faces. He expressed his sincere pleasure at having the opportunity of renewing old acquaintances and paid tribute to the important role which the construction men are playing in the war effort.

Interesting impressions of wartime conditions in Great Britain were unfolded in an address given by Sydney Samson, sales manager of the Lyons Tea Company, who is associated with the Wartime Prices and Trade Board, and who visited the Old Country recently.

Prior to the dinner, a meeting of the construction department field force was held at the head office of the Commission in the forenoon when problems associated with the department's work and working conditions were discussed. The afternoon programme also included a visit to the John Inglis plant.

Because of the full-speed-ahead policy which calls for the uninterrupted construction of important wartime projects, the attendance at this year's meeting was smaller than usual. However, such points as Burlington, Niagara Falls, Ogoki, Barrett Chute and DeCew Falls were represented at the meeting.

## DISTRICT ENGINEERS CHANGE TERRITORIES

**Re-allocation of Duties Announced by R. T. Jeffery  
Following Retirement of F. T. Stocking**

**R**E-ALLOCATION of duties and territorial jurisdiction of district municipal engineers has been announced by R. T. Jeffery, chief municipal engineer of The Hydro-Electric Power Commission of Ontario. These changes, Mr. Jeffery points out, have been necessitated through the retirement of Frederick T. Stocking after 35 years' service with the Commission.

Mr. Stocking, who was district engineer of the Toronto metropolitan area and other adjacent territory, is succeeded by E. R. Lawler who was formerly district engineer of the Windsor area, and V. A. Beacock, formerly assistant to Mr. Lawler, becomes district engineer of Windsor. H. J. Edwards, who was engineer of the Toronto western section, takes over similar duties in the Stratford area, succeeding E. R. Martyn who is being transferred to

## FAIRYLAND SCENES CREATED BY STORM

**T**HEY hauled antique oil lamps out of the cobwebs and offered up to a dollar each for candles which were soon sold out. They cooked and tried to keep warm over open fireplaces. In addition to electricity, they lacked telephone and telegraph services and electric radios were, of course, dead. Some even made a New Year's Day dinner out of ham sandwiches. Theatres were closed and dances were called off. Streets were littered with fallen trees, poles and wires which were encrusted with glistening ice.

Add to these conditions, freezing temperatures, raging winds and driving sleet and you can form an impression of the plight of the people in the area of the storm which broke with devastating fury on December 29 across sections of Eastern Ontario.

Two members of the H.E.P.C. staff who spent New Year's in this area are Evelyn Cheney and Rose Olive. The former was at Alexandria and the latter was visiting Cornwall. The snow, sleet and ice, they stated, transformed the countryside into a veritable fairyland. Trees and brush, laden with ice, glistened like diamonds in the sunlight. Both are agreed, however, that they will never forget their experiences in "Fairyland."

the Kitchener district. The latter territory was formerly under the jurisdiction of D. G. Ferguson, who comes to the Toronto east section to succeed E. G. Maddock who takes over the Toronto west district.

The duties carried on by these district H.E.P.C. engineers involve assistance to Hydro municipalities in engineering and executive problems associated with the administration and operation of utilities and in the construction of local distribution systems. These men also look after the interests of municipalities in the matter of power supplies. In addition, the engineers supervise the rural systems in their respective territories, giving direction to H.E.P.C. employees in connection with construction, operation, maintenance and local administration.

The re-allocation of territories announced by Mr. Jeffery directs attention to the actual area represented in each district. Windsor district, for example, extends as far north as Forest and Thedford, east to Glencoe and Highgate and is bounded on the south by Leamington and Kingsville, and on the west by Amherstburg. Stratford takes in Hydro municipalities bounded by lake Huron on the west, Stratford, Milverton and Listowel on the east, while it extends north to Port Albert, Blyth and Brussels with St. Marys marking the southern boundary. The municipalities which mark the outposts of the Kitchener area are Galt and New Dundee in the south; Stratford to the west; Fergus and Elora in the north, and Hespeler in the east. The Toronto metropolitan area embraces territory as far west as Burlington and Guelph, east to Stouffville and Dunbarton, north to Sutton, with the area between Burlington and Scarborough marking the southern boundary.





# *Worst Storm* **IN 50 YEARS**

**Sweeps Through 3,000 Square Miles Of St. Lawrence Country, Crippling Power, Telephone And Telegraph Facilities — Hydro Crews Toil Day And Night To Restore Service**

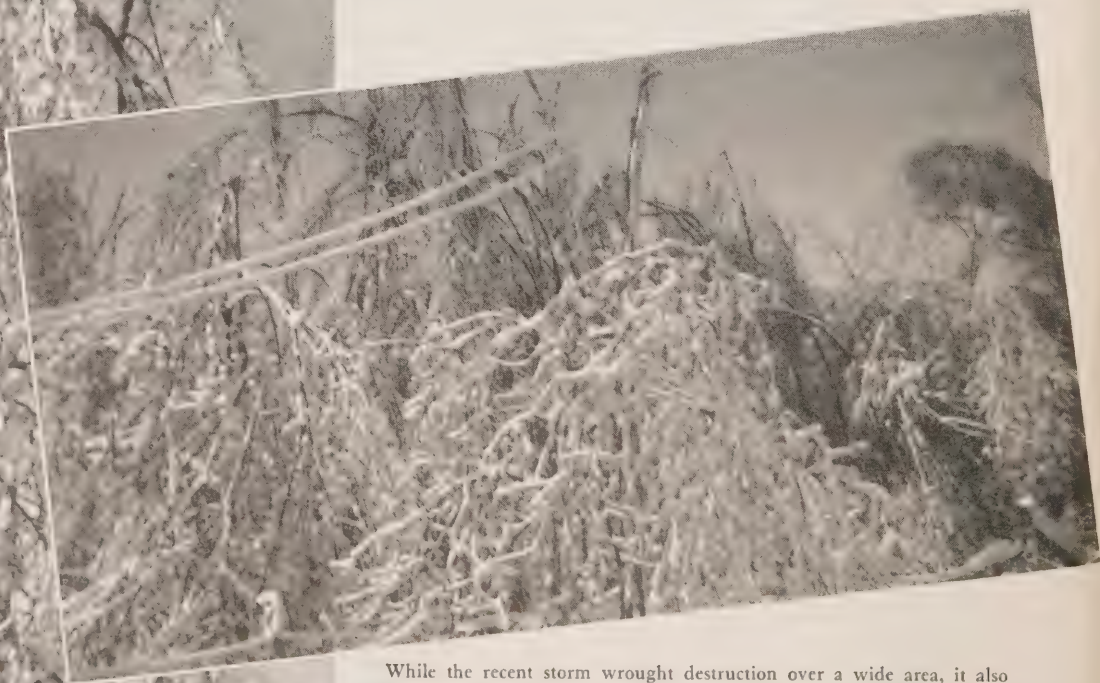
By **VERNON O. CLAPP, H.E.P.C.**

**T**HE most devastating snow and sleet storm in 50 years swept through more than 3,000 square miles of the St. Lawrence country on December 29, crippling power, telephone and telegraph lines, paralyzing transportation of all kinds, and causing untold property damage.

Eastern Ontario had experienced bad storms early in December. A whirling blizzard in the Ottawa river area on the 2nd had filled the country roads and stopped through motor traffic on the Ottawa-Montreal highway for a week. Trucks were parked at the side of the highway and abandoned until snowploughs were able to batter the huge snow drifts. By Christmas main highways were again open to motor traffic.

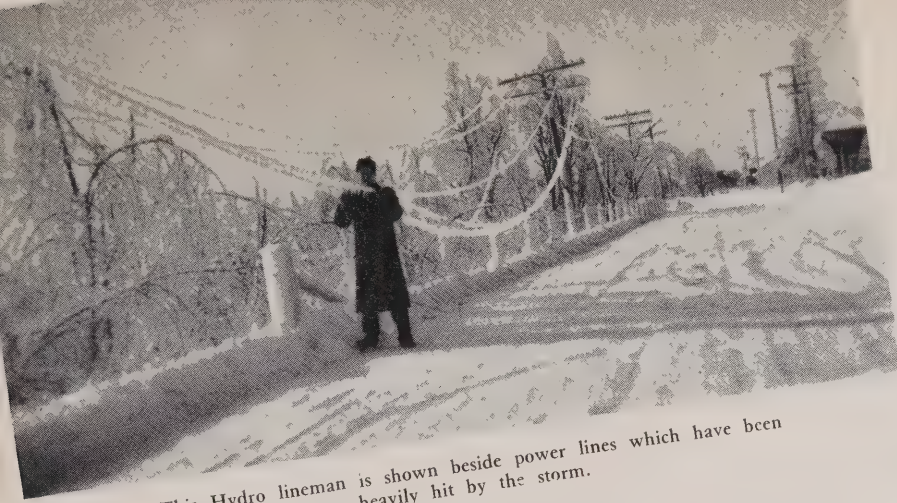
#### **Rained and Froze 22 Hours**

Then came "The Great Storm." It began to rain on the 29th when the outdoor thermometer at Cornwall transformer station registered 19 degrees Fahrenheit. It rained

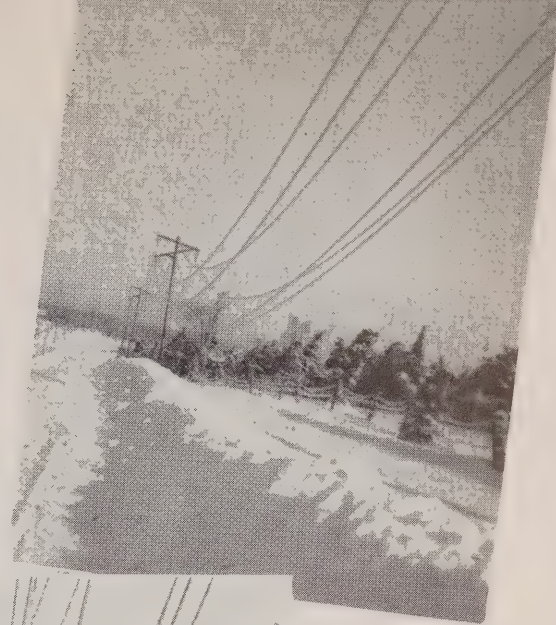


While the recent storm wrought destruction over a wide area, it also enshrouded nature in a mantle of glittering white beauty as snow, sleet and bitter winds brought about an arresting transformation in the countryside. These are some of the





This Hydro lineman is shown beside power lines which have been heavily hit by the storm.



and froze for 22 hours until the area from Brockville to the Quebec boundary was one vast sheet of ice. On the 30th the rain turned to snow of blizzard intensity which continued for another day. Heaviest icing occurred along the St. Lawrence from Brockville to the Quebec boundary, extending north roughly 15 miles from the river and south far into New York State, while Kingston, Smiths Falls and Ottawa reported a lighter coating of ice.

The Cornwall area suffered most heavily from ice, and when the sun finally appeared, the city looked fantastic. It was the worst storm in the city's history. Telephone and telegraph wires, loaded with ice till they were as thick as a man's wrist, snapped when the wind caught them. Poles broke under the load and fell in all directions, sometimes leaving jagged stubs. Streets were blocked by limbs from trees and tangled coils of wire.

Hedges looked like masses of steel wool. A week after the storm trams were still frozen in their tracks on the city's outskirts. It was reported that a tree near the city had 15 wild birds frozen on its limbs, and that farmyard poultry froze in their tracks. Six thousand electric power users were without heat and cooking facilities. Hundreds moved into hotels or doubled up with neighbours who had wood for their furnaces.

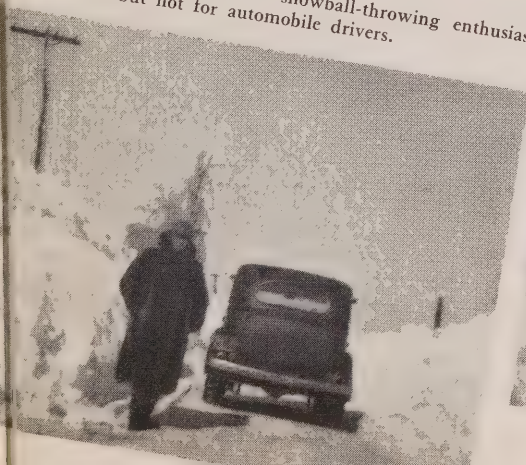
It was by far the greatest storm damage that the Commission has experienced in almost 30 years of operation in the St. Lawrence area. Previous storms had affected only a few poles and caused short interruptions in service.

#### Cornwall Hard Hit

With the exception of a few major industries which derive their power supply from the Commission's lines,

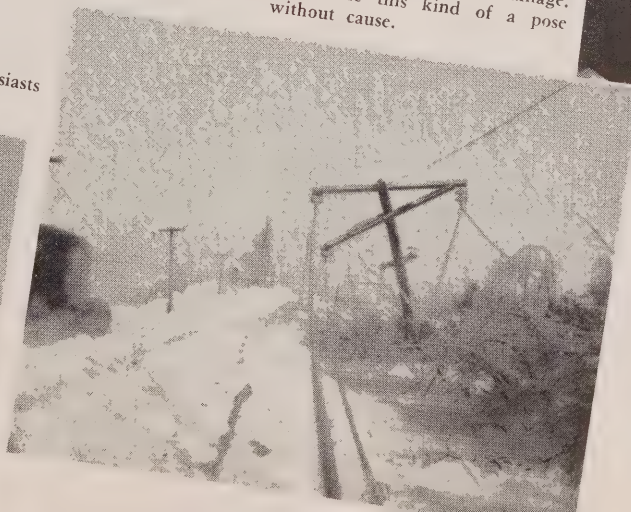
*(Continued on page 18)*

The weather was first rate for snowball-throwing enthusiasts but not for automobile drivers.



Who said there was no storm? One glance at this illustration should prove it beyond words.

And here's still further proof of storm damage. Poles and lines don't strike this kind of a pose without cause.



Here's a close-up of some power lines which "bit the snow." Note the solid ice particles.



Still another typical storm scene. It's in the Martintown-Apple Hill section.



# O.M.E.A. HAS SUCCESSFUL YEAR

Many Important Problems Will Be Discussed At February Convention In Toronto

By Kenneth A. Christie, K.C.

PRESIDENT, O.M.E.A.

THE Ontario Municipal Electric Association has had a very successful year. At present, the membership is the largest since its inception, while the finances are in a healthy condition. District meetings without exception were well attended, and there were many interesting and informative discussions on Hydro matters.



K. A. Christie.

Several factors have contributed to this success. In the first place, individual members have exhibited a keen interest in the work of the association and have given much support to the executive committee, particularly in regard to problems created by the war. Many constructive suggestions were made by the conservation of power committee with reference to effective means of conserving power and of keeping the public properly informed as to the need for this conservation.

## Committee Reports

The pension and insurance committee report that all but one municipal authority in the plan have agreed to increase their contribution to 7½% of payroll, and that since this settlement was effected, several new commissions are participating.

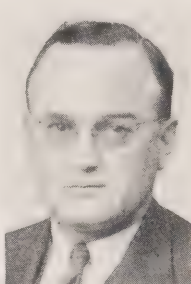
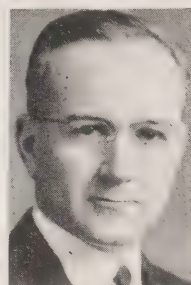
As a result of a test case, the Hamilton Hydro-Electric Commission obtained a favorable decision from Mr. Justice Cannon to the effect that employees of local Hydro and public utilities commissions and committees are classified as being engaged in excepted employment under the Unemployment Insurance Act. Subsequently, representations were made to the Minister of Labour with the result that a proposed amendment to the Act was withdrawn.

Internal organization was carefully considered by two committees, namely, the committee re secretary's office and remuneration and the committee re re-grouping of districts. The recommendations of both committees were accepted by the executive.

The legislation committee has been closely watching legislation which might possibly affect Hydro. It has also noted the attempts of certain individuals and organ-

(Continued on page 15)

## O.M.E.A. OFFICERS



Shown above along with Dr. W. J. Chapman, St. Catharines, past president of the O.M.E.A., are the eight district vice-presidents of the association. They are as follows: Top row, left to right: Dr. Chapman; W. R. Strike, Bowmanville, District No. 1; and Alfred Menary, Grand Valley, District No. 2. Middle row, left to right: Dr. M. P. Bengier, Port Arthur, District No. 3; A. G. Jennings, East York, District No. 4; and K. C. MacLeod, Stamford, District No. 5. Bottom row, left to right: H. O. Hawke, Galt, District No. 6; P. R. Locke, St. Thomas, District No. 7; and G. A. Edwards, Windsor, District No. 8.



## O.M.E.A. SECRETARY

FROM her busy office in Guelph, an energetic young lady guides the secretarial and financial destinies of the Ontario Municipal Electric Association and also manages to handle two other responsible positions "with the greatest of ease." Her name, familiar perhaps to thousands who have never seen her, is Miss Kathleen Ciceri.



Kathleen Ciceri

Born in the City of Guelph (than which, she assured Hydro News unequivocally, there is no finer city anywhere), Miss Ciceri attended the Guelph Tytler School and later the Guelph Collegiate-Vocational Institute. She launched her business career with a six months' bookkeeping position in a men's clothing establishment, following which she became associated with the late T. J. Hannigan, of Guelph, who, for a great many years, was a well-known personality in Hydro and O.M.E.A. affairs.

(Mr. Hannigan, who had been associated with the late Sir Adam Beck in the early days of Hydro, served as secretary-treasurer of the O.M.E.A. from 1914 until his death in 1940, and was for many years secretary-treasurer of the Municipal Hydro-Electric pension and insurance committee).

Miss Ciceri acted as secretary to Mr. Hannigan for nine years, and upon his death she more or less "fell heir," as she expresses it, to the positions he had held. In addition to the O.M.E.A. and pension and insurance offices, Mr. Hannigan was secretary-treasurer of the Simcoe Tobacco Plantations Limited, and this position too was passed along to Miss Ciceri. She was subsequently made official secretary-treasurer of the O.M.E.A. and the tobacco firm and continues as acting secretary-treasurer of the pension and insurance committee.

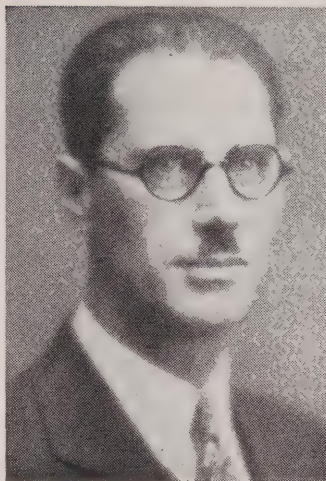
Miss Ciceri says she thoroughly enjoys the many duties of her three-fold position, which, in addition to office work, involves considerable travelling in the course of a year. If you should venture the obvious remark that such responsibility is a very large order for any one person, Miss Ciceri will explain that the "rush" seasons of the various organizations do not coincide, fortunately—and after all, "c'est la guerre!"

Gracious in manner, bright and interesting in conversation, the versatile Miss Ciceri attends as many of the O.M.E.A. district meetings as possible. On practically all such occasions she is the only lady representative in attendance, the realization of which at first caused her a little embarrassment, she admits. ("But everybody's so nice, and you get used to it.")

Her recreational agenda features dancing, skating, and swimming, her leisure pursuits corresponding in number, coincidentally, with her business responsibilities.

With the O.M.E.A.-A.M.E.U. convention being held in Toronto just a few days hence, Miss Ciceri has a multitude of details to look after, but she takes things in her stride and nothing will be overlooked.

## ON A.M.E.U. COMMITTEES



A. W. BRADT,  
general manager of the Hamilton  
Hydro-Electric System, chairman  
of the A.M.E.U. papers committee  
for the forthcoming convention.



R. B. CHANDLER,  
manager of the Port Arthur Public  
Utilities Commission, chairman  
of the A.M.E.U. convention  
committee.

### "PARTY FARE" OBTAINABLE IF TEN OR MORE TOGETHER

Delegates who are coming to Toronto by train to attend the O.M.E.A. and A.M.E.U. conventions can take advantage of the "party fare" provided ten or more start from the same point and travel together on the going trip. On this basis, each member of the party would pay the cost of a single fare plus one-half for the round trip ticket which is good for sixteen days from the date of issue.

This information was provided by the Canadian Passenger Association which directs attention to the fact that, in accordance with an order of the transport controller, effective last September, special reduced fares are no longer available to individuals travelling to conventions.

Convention rates for delegates at the Royal York Hotel, Toronto, are \$4.00 per day for single rooms, and \$3.50 per day per person, two to a double room with twin beds. Reservations should be made in advance, return post cards being provided for that purpose.

### ANNUAL DANCE TO AID WAR SERVICES FUND

Once again the entire proceeds of the annual dance of the Ontario Hydro-Electric Club, to be held on February 26, 1943, in the Royal York Hotel, Toronto, will go to the club's War Services Fund.

This announcement was made by R. M. Laurie, president, in urging all club members and their friends to attend this year's dance, which is the 21st sponsored by the club. A new feature will be a raffle, the proceeds of which will also go to the War Services Fund.

Members of the committee in charge of arrangements are: Roy E. Taylor, chairman; Miss Marion Shaver, W. V. Morris, F. B. Pope and F. J. Ingraham.



# PLANNING CAN AID WAR EFFORT

**A.M.E.U. Delegates Can Learn Much From Reports, Papers and  
Discussions At Coming Convention**

**By Vernon A. McKillop**

**PRESIDENT, A.M.E.U.**

**H**ISTORY will record many events in the past year because of their effect upon our welfare and progress. It was a year during which the Third Victory Loan was sold under the slogan "Nothing Matters Now But Victory"; a year which has marked the mustering of our strength on the farm, in the factory and on the fighting front, and a year in which the increasing power demands of war industries could be met only by applying restrictions and through voluntary conservation on the part of domestic consumers.



V. A. McKillop.

our actions should be governed by a desire to put first things first. Generally, it may be said, that this attitude has been wholeheartedly endorsed by the public. Restrictions in the use of electricity, both compulsory and voluntary, have been so well received that the results have been an agreeable surprise to many of us.

A special committee under the chairmanship of O. H. Scott was appointed to deal with wartime problems. The conservation of non-ferrous metals, pooling of stocks, salvage of scrap metal, extension of the re-seal period of watt-hour meters, the effects of the loss of revenue arising from the restrictions of the Power Controller and post-war planning were all considered. Further study of these important matters is justified, and there will be an opportunity at the forthcoming convention to discuss them. Other questions of general interest at this time concern priorities, staff and possible operating economies.

Merchandising problems were emphasized by the action taken on range switches. A committee representing the A.M.E.U. and O.M.E.A. was appointed to bring about some standardization, and a request made to the Canadian Engineering Standards Association for their assistance in this matter.

Replacements of springs on certain switches is now being undertaken on a far greater scale than ever before because of the difficulty involved in obtaining new switches.

Stove elements, fuses and parts for various appliances are already a matter of concern, and a fair distribution of available supplies is likely to prove difficult. This situation might be met by making repair parts available to certain Hydro shops that are equipped to service a wide variety of appliances.

The committee on accounting and office administration has maintained its reputation for action. At a recent meeting, representatives from many municipalities in the

*(Continued on next page)*

## A.M.E.U. BALLOT

**T**HIS year's election ballot for officers of the Association of Municipal Electrical Utilities will show the following names:

**President:** R. B. Chandler, Port Arthur. Acclamation.

**Vice-presidents:** S. W. Canniff, Ottawa, and R. S. King, Midland.

**Secretary:** S. R. A. Clement, H.E.P.C., Toronto. Acclamation.

**Treasurer:** F. A. Archer, H.E.P.C., Toronto. Acclamation.

**Directors:** (Three to be elected from the membership at large)—A. W. Bradt, Hamilton; G. E. Chase, Bowmanville; H. R. Hatcher, Galt; A. B. Manson, Stratford; R. S. Reynolds, Chatham; O. C. Thal, Kitchener.

**District directors:** Niagara district—R. Harrison, Scarborough Twp.; J. E. Teckoe, Jr., Tillsonburg; Stewart Watt, Guelph. Central district—C. A. Walters, Napanee. Acclamation. Eastern district—M. W. Rogers, Carleton Place; R. J. Smith, Perth. Georgian Bay district—L. G. McNeice, Orillia; J. C. MacNab, Uxbridge. Northern district—C. J. Moors, Fort William; A. W. H. Taber, North Bay.

Delegates will obtain their ballots during the first morning of the convention—Tuesday, February 9—and the ballot box will be closed immediately after the opening of the afternoon session the same day. Results will be announced before that session ends.

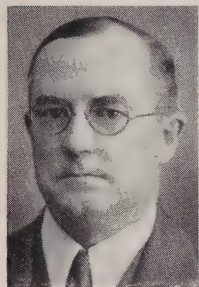


## RECALLS EARLY DAYS IN A.M.E.U. HISTORY

**Name Changed In 1918, Says S. R. A. Clement,  
Secretary of the Association**

Remember March 14, 1918?

This was an important date in the records of the Association of Municipal Electrical Utilities for it marked the official organization of the association under that name.



S. R. A. Clement

Hydro News learned this fact from S. R. A. Clement who has been secretary of the association from its earliest days. He pointed out that formerly the group had been known as the Engineers Section of the Ontario Municipal Electric Association and that meetings had been held, from time to time, from the year 1909.

Identified with the H.E.P.C. since that year, Mr. Clement was born on a farm in the township of Innisfil, Simcoe county. As a boy he attended "the little red school house" in the section and completed his education at Barrie Collegiate and S.P.S., Toronto, graduating in 1905. Before coming to the Commission he held positions with the T. and N.O. Railway Commission and with General Electric in Schenectady, N.Y.

### PLANNING CAN AID

*(Continued from previous page)*

western section discussed joint accounting, payroll deductions, billing and meter reading. There will be an opportunity at the convention for this group to meet again for the consideration of matters of particular concern to them.

Accident prevention and health promotion is a field in which valuable work appropriate to our war effort might be undertaken. Industry is giving more and more attention to this subject; probably similar conditions apply among utilities.

At the request of the Canadian Engineering Standards Association, there is now a representative of the A.M.E.U. on the committee on pole line hardware. Our regulations and standard committee has already had the opportunity of expressing the views of the members regarding certain items and this has been conveyed to the C.E.S.A. for consideration. This work has a special wartime application in offering guidance to the administrator in the reduction of the number of manufactured items.

### Can Serve War Effort

It should be apparent from the foregoing that there are many ways in which the A.M.E.U. can serve the war effort. Furthermore, our efforts in this regard can only be made effective by meeting for discussion and planning. Our convention in February will provide that opportunity. Those who have assumed responsibilities in civilian defence will welcome the paper on that subject. Others will find the papers on steel furnaces, conservation and sub-

## HYDRO'S PATRIOTISM IS PRAISED BY HOWE

**Commission Turns Over to Government \$25,000  
Surplus Accumulated Under "Bits and  
Pieces" Contracts**

**A**NNOUNCING that a gift of \$25,000 to help the war effort had been received by the Dominion treasury from The Hydro-Electric Power Commission of Ontario, Hon. C. D. Howe, minister of munitions and supply, described the gesture as "an eloquent tribute to the patriotism of the Commission."

Mr. Howe explained that the gift represented profits accumulated under the "Bits and Pieces" contracts undertaken by the H.E.P.C., as a member of the Ontario Public Utilities Wartime Workshop Board which was formed in July, 1941, at his request.

In a letter to Mr. Howe, Dr. Thomas H. Hogg, chairman and chief engineer of the Commission, pointed out that although the costs had been estimated as closely as possible, the \$25,000 surplus had accumulated. As it had never been intended that there should be any surplus, the Commission had felt that the money should be returned to the Dominion government, Dr. Hogg wrote.

Humming with activity day and night, the various Hydro machine shops taking part in the "Bits and Pieces" programme, have been engaged in machining and assembling vital parts required in Canada's war production programme. These shops have not only established an impressive record of achievement but a reputation for fine workmanship. The work is diversified. One shop is concentrating upon the making of small parts such as special studs, oil screws, bolts and nuts, while other operations include the machining and assembling of shafts, pinions, worm wheels for anti-tank gun mounts, armour-piercing shot and gun cradles for tanks.

At other shops, where heavier equipment is available, Hydro workmen are engaged in boring, facing and drilling high and low pressure cylinders for marine engines as well as in machining and assembling shafts for naval craft.

Only recently, W. R. Harmer, co-ordinator for the Ontario Public Utilities Wartime Workshop Board, announced that, during the past year, Hydro machine shops had fabricated and machined more than 24,500 pieces, representing 70,000 man-hours of work at a total cost of approximately \$120,000.

stitution of particular interest. From these papers, reports and discussions, there is much that we can learn and much that can be accomplished.

Since the first issue in June last, Hydro News has given valuable aid to the A.M.E.U. by publication of its activities. I welcome this opportunity to acknowledge this assistance, and to express the hope that this publication may play an important part in the progress of Hydro in Ontario in the years to come.



# Around the Hydro Circuit

Hydro and municipal affairs have occupied a prominent place in the life of **James Halliday**, chairman of the Kingston Public Utilities Commission.



James Halliday

Mr. Halliday was born in the Village of Portsmouth, where he later served fifteen years on the Village council, eleven years as reeve. He was warden of Frontenac County in 1916. Shortly after taking up residence in Kingston, Mr. Halliday became a member of the Public Utilities Commission. He has served the Commission for 17 years, the past nine as chairman.

Before entering the electrical contracting business, from which he retired in 1930 after 25 years in that field, he had spent some time in the hardware business. He subsequently worked with the Gananoque Water and Power Company, the Kingston Light and Power Company, and the Kingston Electric Railway, where he acted as mechanical and electrical superintendent.

The work of the Public Utilities Commission has been Mr. Halliday's interest almost exclusively since leaving active business. A vigorous advocate of Hydro's public ownership enterprise, Mr. Halliday is an executive official of District No. 1, O.M.E.A.

**William Boddy**, chairman of the Oshawa Public Utilities Commission, was born in Darlington Township in 1885, receiving his education in Darlington, East Whitby and Oshawa.



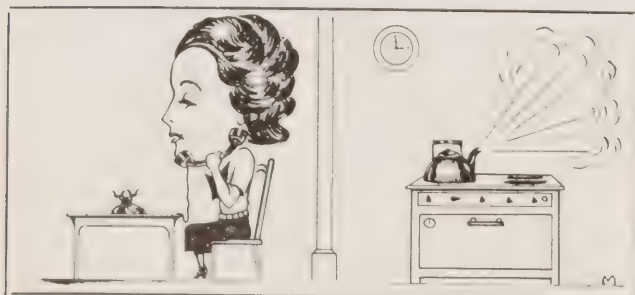
William Boddy

He has been associated with the Robson Leather Company for the past 36 years, and has also devoted much time to civic affairs, having been a member of city council from 1929 to 1932, while he served for three years on the Board of Health. He has been first vice-president of the Victorian Order of Nurses since 1932.

Mr. Boddy has given faithful service to the Public Utilities Commission since 1936.

After business hours there's a good chance of finding him at the Oshawa Curling Club.

## WASTE



**F. H. May** is a name synonymous with Hydro development in St. Marys, Ontario. Born and educated in the city he has served with distinction, Mr. May entered the employ of the White and May Drygoods concern upon graduation from Collegiate Institute. Ever since his student days he had been intrigued by things electrical, and the fascination developed with the years.



F. H. May

Mr. May is now chairman of the St. Marys Public Utilities Commission, director of the O.M.E.A., and vice-president of the Association's District No. 6.

He was elected to the Public Utilities Commission in 1927 and, in 1932, became its chairman, a position he has retained since that time. In 1940 he was appointed to the executive of O.M.E.A., District No. 6, and, last year, was named a director of the Association, in which capacity he still serves. The recent district convention conferred upon him the vice-presidency of District No. 6.

Under Mr. May's capable guidance, the St. Marys Commission has built a new pumping station, office building, workshops, garage, and other facilities dedicated to the highest standard of Hydro service.

An energetic businessman, Mr. May is also vice-president and general manager of the White and May Co. Ltd.

**Lester E. Weaver**, chairman of the Hespeler Hydro-Electric Commission, can point with pride to his record of 38 years of continuous service in public life.



Lester E. Weaver

Mr. Weaver assumed his first public office back in 1905, as a member of the Hespeler town council. He held this post until 1910, and in the following five years, served as reeve. In 1916 he was elected mayor and remained in office until 1920. He subsequently served as mayor in 1930 and 1931. Ever since 1916 Mr. Weaver has been a member of the Hydro-Electric Commission, and during those many years of unbroken service his administrative ability and technical knowledge have contributed notably to the progress of Hydro in Hespeler and southwestern Ontario.

Mr. Weaver feels that hunting and fishing are essential components of the well-balanced life, and during his vacation period may be found with rifle and rod up in the Lake of Bays district.

The cartoon (left) directs attention to practices which can contribute to serious waste in wartime. The woman is shown carrying on what may be a comparatively trivial telephone conversation while the electric stove switch is still on with the kettle boiling. She is, therefore, not only wasting electricity, which is vital to the war effort, but she may be making an unimportant demand upon another service which is essential to victory.



## O.M.E.A. AND A.M.E.U. WINTER CONVENTIONS

ON February 9 and 10 delegates of the Ontario Municipal Electric Association and of the Association of Municipal Electrical Utilities will meet at the Royal York Hotel, Toronto, for the winter conventions. The following are the programmes made available to "Hydro News" by officers of the respective groups:

### O.M.E.A. PROGRAMME MONDAY, FEBRUARY 8

Evening: Registration; 6.30 p.m.—Executive dinner followed by executive meeting.

### TUESDAY, FEBRUARY 9

Morning: 9.00 a.m.—Registration; 10.00 a.m.—Convention session; minutes; president's address; secretary's and executive's report; naming of committees; treasurer's report and report of finance committee; reading of resolutions and reports of the following committees: conservation of power; regrouping of districts; legislation; standardization of switches; pension and insurance.

Afternoon: 12.30 p.m.—Joint luncheon with A.M.E.U.; civic greetings; speaker, B. A. Trestrail, Director of Co-ordination, John Inglis Company Limited, Toronto.

2.00 p.m.—Joint session with A.M.E.U.; address by Thomas H. Hogg, B.A.Sc., C.E., D.Eng., chairman and chief engineer, The Hydro-Electric Power Commission of Ontario; discussion.

Evening: 6.30 p.m.—Convention banquet with A.M.E.U.; speaker—R. C. Wallace, M.A., Ph.D., D.Sc., LL.D., F.G.S., F.R.S.C.; Principal of Queen's University, Kingston. Subject: "Electrical Power in War and in Reconstruction." Entertainment.

### WEDNESDAY, FEBRUARY 10

Morning: 9.30 a.m.—Convention session; reports of committees; credentials; resolutions; election of officers; report of election of district directors; unfinished business; new business.

Afternoon: 12.30 p.m.—Joint luncheon with the A.M.E.U. and Electric Club of Toronto; speaker—R. P. Bell, Director-General, Aircraft Production Branch, Department of Munitions and Supply, Ottawa. Subject: "Canadian Aircraft Production."

2.30 p.m.—Convention session; district reports; discussion of district reports; unfinished business.

O.M.E.A. executive committee meeting immediately following close of afternoon session.

### A.M.E.U. PROGRAMME MONDAY, FEBRUARY 8

Evening: Registration.

### TUESDAY, FEBRUARY 9

Morning: 9.00 a.m.—Registration; 10.30 a.m.—Convention session; president's address; auditor's report; reports of committees; paper—"The Why and How of Conservation and Substitution", by A. A. Moline, mechanical engineer, Canadian Westinghouse Company, Hamilton; discussion.

Afternoon: 12.30 p.m.—Joint luncheon with the O.M.E.A.

2.00 p.m.—Convention session; election of officers; the ballot will be closed immediately after this session has been opened and the results will be announced before the end of the session; joint session with O.M.E.A. (See O.M.E.A. programme.)

Evening: 6.30 p.m.—Convention dinner with O.M.E.A. (See O.M.E.A. programme.)

9.30 p.m.—Executive committee meeting.

### WEDNESDAY, FEBRUARY 10

Morning: 9.30 a.m.—Convention session; paper on the annual cost of power to municipalities; discussion; paper—"The Three-Phase Arc Furnace in the Production of Steel", by Samuel Arnold, III, Pittsburgh, Pa.; discussion.

10.30 a.m.—Accounting session; business meeting; round table conference conducted by the committee on accounting and office administration.

Afternoon: 12.30 p.m.—Joint luncheon with O.M.E.A. and the Electric Club of Toronto. (See O.M.E.A. programme.)

2.00 p.m.—Convention session; illustrated address—"England—Its Civilian Protection and Utility Operation in War Time," by Davis M. DeBard, vice-president, Stone and Webster Service Corporation, New York.

### SUCCESSFUL YEAR

*(Continued from page 10)*

izations to have additional burdens imposed on Hydro and to undermine the principle of public ownership.

The creation of the "Hydro News" has undoubtedly stimulated the interest of commissioners not only in the work of the Ontario Municipal Electric Association but also in its personnel. It has helped to strengthen the bond of common interest by reporting the activities of all branches of the Hydro family. I would again urge every member to show his appreciation of what this magazine is doing by forwarding to the Editor any items of interest either in regard to Hydro achievements or those of a more personal character.

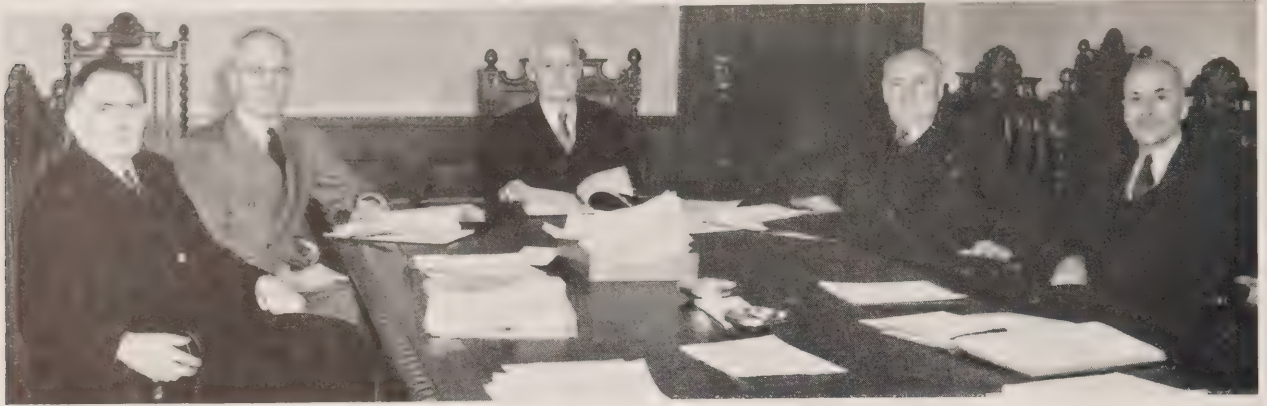
Another feature contributing to our successful year has been the splendid co-operation which our organization has received from the members of the Hydro-Electric Power Commission of Ontario. At each district meeting either the chairman or some member of the Commission has been present to keep us advised as to the progress of Hydro and to help us solve the perplexing problems caused by the war.

I wish also to acknowledge the valuable assistance which our organization has received from the Association of Municipal Electrical Utilities. For instance, a committee consisting of representatives of both associations is studying ways and means to bring about a standardization of electric range switches. If this is accomplished it will simplify maintenance problems and will result in a great saving to Hydro consumers. I feel that closer co-operation in the future between the two organizations is to be encouraged.

The Ontario Municipal Electric Association is looking forward to the coming convention with particular interest. Many important problems will be discussed. Some of these problems, created by the war, are with us now—others will arise in the post-war period. I am strongly of the opinion that we should not wait until the conclusion of the war to cope with difficulties which will arise then. The question of post-war reconstruction should not be left entirely to the Government but each individual organization or enterprise should be assisting the Government by making its own plans now to solve the problems which will inevitably occur later.



# AT THE HYDRO HELM IN TORONTO



A MEETING of the commission was in progress when Hydro News and a photographer visited the Toronto Hydro-Electric System headquarters at 14 Carlton Street. Chairman Joseph Gibbons and his colleagues were obliging, however, and interrupted the proceedings for a few minutes while the above photograph was taken. In the group (from left to right) are E. M. Ashworth, general manager and chief engineer; Kenneth A. Christie, K.C., vice-chairman; Joseph Gibbons, chairman; Dr. Fred J. Conboy, mayor of Toronto; and H. J. MacTavish, secretary and assistant to the general manager. Brief biographical sketches of these men follow.

**Joseph Gibbons**, well-known chairman of Toronto's Hydro enterprise, was born at Linwood, Waterloo County, Ontario. Behind him is a long record of service in the business and municipal life of Toronto.

While an employee of the old Toronto Street Railway Company, Mr. Gibbons took a keen interest in labour union activities and occupied posts of high responsibility in the Amalgamated Association of Street and Electric Railway Employees. From 1911 to 1914 he served on the Ontario Workmen's Compensation Committee, whose groundwork was later embodied in the Workmen's Compensation Act, enacted by the Ontario Legislature, and during the period 1916 to 1918 he was a member of the War Trade Board. He was also a delegate to, and ultimately vice-president of, the Great Lakes and Harbours Commission.

An equally active role in civic life began with his election as alderman for Ward Six from 1915 to 1918. From 1920 to 1929 he served continuously as controller, and during 1928 was president of the Toronto City Council.

Mr. Gibbons was appointed a Toronto Hydro-Electric Commissioner in November, 1929, and became chairman of the Board in June of the following year, a position he has graced since that time with a high degree of success.

He was a director of the O.M.E.A. in 1930-32 and 1935-37. During the years 1935 and 1936 he was vice-president of the association and since 1938 has been an honorary vice-president. The chairmanship of the pension and insurance committee has been his responsibility since 1931.

A citizen of outstanding merit and a loyal public servant, Mr. Gibbons has contributed immeasurably to the progress of the city of Toronto.

**Kenneth A. Christie, K.C.**, vice-chairman of the Toronto Hydro-Electric System, has for several years been an ener-

getic figure in municipal Hydro affairs. Last year as president of the Ontario Municipal Electric Association, he travelled to many distant points in the province to attend the district meetings.

Born at Winchester, Ontario, in the year 1900, he received his early education in his home town; graduated from the University of Toronto in 1922, with honours in political science; entered Osgoode Hall, and was called to the bar in 1925. During his days at law school, Mr. Christie was chosen president of the law students' athletic and literary society.

He was appointed vice-chairman of the Toronto Hydro-



This is the Toronto Hydro-Electric System building which is located at 14 Carlton Street.



Electric System in 1934, and has occupied this office continuously since that time.

In recognition of the high place he holds in the legal profession, the designation "K.C." was conferred upon Mr. Christie in 1938.

Before assuming the presidency of the O.M.E.A. in 1942, this busy official had served the previous year as vice-president of the Engineers' Club of Toronto.

Mr. Christie's efforts are currently devoted to preparations for the convention being held in Toronto next month by the O.M.E.A. and the A.M.E.U., and elsewhere in this issue will be found an article he has written in connection with association activities.

Born in December, 1882, in Toronto—the city he is now serving as chief magistrate for the third successive year—**Dr. Fred J. Conboy** attended Dovercourt, Dewson and Givens Public Schools, Humberstone Collegiate Institute, and the University of Toronto, graduating in 1904 as a Doctor of Dental Surgery. He practised in Toronto from 1904 until 1925, at which time he was appointed director of dental services for the Province of Ontario, and in this latter capacity he served continuously until 1934.

Permanent secretary of the Ontario Dental Association and editor of the association's journal for the past 25 years, Dr. Conboy has also had a lengthy affiliation with the University of Toronto. He has been a professor of dental praxis, faculty of dentistry, since 1917, and a professor at the College of Optometry since 1935. A leading figure in his profession, Dr. Conboy has been president of the Canadian Dental Association, Ontario Dental Association and the Toronto Dental Educational Society; Canadian representative to the International Dental Federation; and at present is a director of the Canadian Dental Hygiene Council and the Canadian Dental Research Foundation.

Keenly interested in civic affairs, Dr. Conboy was a member of the Toronto Board of Education from 1909 to 1914, rising ultimately to the chairmanship, and during 1935 and 1936 he served as alderman. The following year he was elected as controller, which office he occupied until the end of 1940. His election as mayor for 1941 has been followed by two acclamations, in appreciation of his fine record of service. As mayor of the city, Dr. Conboy automatically becomes a Toronto Electric commissioner.

The manifold duties of public life are further supplemented by activity in other fields. His Worship is a member of the Reserve Battalion, Queen's Own Rifles, and superintendent of the Westmoreland Sunday school. For recreation, he prefers the refreshing outdoor sports of hunting and fishing.

The enterprising town of Newmarket, Ontario, was the birthplace of **E. M. Ashworth**, general manager and chief engineer of the Toronto Hydro-Electric System. Receiving his early education in Toronto public schools and Harbord Collegiate Institute, Mr. Ashworth entered the University of Toronto and graduated in 1907 as a Bachelor of Arts.

Shortly after graduation he joined the staff of the Canadian General Electric Company as engineering assistant, while from 1908 until 1910 he served the same company as sales engineer. His next move was to the Toronto Hydro, where he was appointed assistant to the

managing engineer, a position he occupied from 1910 to 1913. Recognition of his valuable service came in 1913 with his appointment as secretary and assistant general manager. Seven years later Mr. Ashworth rose to the position of acting general manager, and in 1924 he assumed the position of dual responsibility he now holds—general manager and chief engineer. From 1920 to 1923 he also served as secretary of the Toronto Transportation Commission.

For many years he has been identified with a number of technical and public service bodies, and had the distinction of being the first secretary of the O.M.E.A., from 1911 to 1914. He is a director of the Electric Service League, a member of the A.I.E.E., past president of the Electric Club of Toronto, and a director of the Technical Service Council.

But the interests of this busy official are not confined solely to the technical field. He is a member of the Senate of the University of Toronto and a past president of the U. of T. Alumni Association; vice-president and director of the Toronto Industrial Commission; and a member of the Toronto Board of Trade.

A man of quiet disposition, unassuming and easy of approach, Mr. Ashworth has a family of one son and one daughter. He spends his leisure hours in the restful pursuit of horticulture.

**H. J. MacTavish**, secretary to the Toronto Electric commissioners and assistant to the general manager, is another distinguished son of "The Queen City." Mr. MacTavish was born in Toronto and received his education at Wellesley Public School, Jarvis C. I., and the University of Toronto, graduating from the latter in 1911 as a Bachelor of Applied Science.

After serving with the Westinghouse organization in Pittsburgh, he joined the staff of the Canadian General Electric Company, acting as testman and sales engineer from 1911 to 1913. The following year he was engaged by the Toronto Hydro-Electric System as assistant engineer.

The outbreak of the Great War marked the beginning of another important phase in his career, when he enlisted for active service. The year 1915 found Mr. MacTavish overseas with the 35th Battalion, C.E.F., and the Eaton Motor Machine Gun Brigade. In November of the same year he was commissioned in the Royal Field Artillery, S.R., and from 1916 to 1919 he served with distinction in Belgium and France with the 19th and 15th divisions of the B.E.F.

Upon his return to civilian life in 1919, Mr. MacTavish became assistant to the general manager of the Toronto Hydro-Electric System, a position he has occupied continuously since that time, and in 1924 he assumed the responsibilities of commission secretary.

Mr. MacTavish has been a prominent figure in the electrical fraternity for many years. A member of the A.I.E.E. since 1911, he has also served as President of the Electric Club of Toronto, 1932-33; director of the Toronto Better Business Bureau, 1935-36; and councillor of the Ontario Association of Professional Engineers, 1941-42.

In his recreational hours, Mr. MacTavish invariably conveys his golf clubs to the nearest greensward—weather permitting!



## WORST STORM IN 50 YEARS

(Continued from page 9)

power customers in Cornwall are supplied by the St. Lawrence Power Company and the Stormont Electric Light and Power Company. The Commission's 110 kv. line from Ottawa to Cornwall terminates at Cornwall transformer station where it connects with a line of the same voltage supplying power to the Aluminum Company at Massena, N.Y. At Cornwall transformer station, the voltage is also stepped down to 44 kv. for distribution in the vicinity and these 44 kv. circuits were the first to develop trouble on December 30. Shortly after noon that day the 110 kv. line between Ottawa and Cornwall also "tripped out and tested bad." This left all Hydro customers in the Cornwall area without power.

Cornwall transformer station had neither telephone nor telegraph communications by this time and the district patrolmen were all out on 44 kv. troubles. They had to be recalled by messenger to begin the patrol of the 110 kv. line. All available line maintenance men were rushed to the St. Lawrence district, and in a comparatively short time there was an army of more than 200 Hydro linemen toiling night and day to restore power service.

The majority of these men had to be brought from outside the affected area, and over 50 of them came from Western Ontario. Many trucks were needed. After the storm, country roads were blocked with snow. Poles and towers were covered with ice which had to be chopped off before the men could climb them. More than 300 poles were down on 44 kv. lines and hundreds on rural lines. Carloads of poles were shipped from the Commission's reserve stock at Cobourg to Apple Hill, Lancaster, Winchester, Plantagenet, Maxville and Brockville. Bell Telephone and telegraph company lines also were severely damaged. Their repair crews, along with Hydro gangs, in the same area overtaxed hotel and boarding house facilities. Many private homes were good enough to provide accommodation and to share their food rations with the linemen.

### Skywire Heavily Coated

Patrols were difficult and slow, so that it was December 31 before the break in the 110 kv. line was located. The cause of this first trouble was found near the Nation river where one span of the skywire had broken between transposition towers. The power conductors had been carrying a heavy electrical load and were warm enough to prevent ice forming on them until the interruption occurred. The skywire, however, carries no power and became so heavily coated with ice that it sagged from its normal position approximately nine feet above the power conductors to the level of, and even below the power conductors. When wind action caused contact between this abnormally sagged skywire and the "hot" conductors, the line tripped out. Patrols located these danger spots and cut down the skywire. As there was no telephone communication, patrolmen had to go back to Ottawa to get the necessary protection guarantees to proceed with work on the line; also they had to return to this point after making the repairs to report clear of the line. Serious faults causing prolonged interruptions to this line occurred four times before it was finally restored to service on January 5.

Conductors on the 220 kv. line from Beauharnois to Chats Falls loaded up with ice until, it was estimated, that each foot of cable carried 7 pounds of ice. A thousand foot span of cable would have to support about 3½ tons of ice. Little wonder that insulators broke under the strain. This break occurred near the Quebec boundary.

### Use Engine Driven Motor

By January 6 Hydro communication experts had established a radio-carrier terminal at the Cornwall station and contact with Ottawa was thereby made available. When power was off at Cornwall T. S., it was necessary to use an engine driven motor generator set for power supply to the radio transmitting equipment. The Bell Telephone Company, working desperately on their lines, finally got a call through to Montreal on January 5.

One curious feature of the storm was that no people were hurt by falling limbs or wires in Cornwall which is famous for its huge elms and maples. A taxi driver had a very close call while driving a carload of textile employees from a mill. His car suddenly ploughed into deep slush and his rear wheels spun. This brief pause saved his cab from being crushed under a giant maple which fell across his path. Hospitals were without power for long periods, but fortunately there were no emergency operations. A baby was delivered in candle light. Cornwallers were without lights, radio, newspapers, movies and refrigerators for many days and nights.

One man paid a dollar for a candle which usually cost a quarter. A funeral director, who also operates a dance hall, drove his hearse onto the ballroom floor and lit the room with the headlights. Butchers were without refrigeration for their meats, and they lost many New Year turkey orders.

In general, north and south lines iced much heavier than those running east and west. A few poles broke on the 44 kv. line from Brockville to Prescott, but service was restored from Brockville to Prescott, Cardinal, Iroquois, Morrisburg and Williamsburg on December 31. However, poles collapsed after that date from the ice load, but were quickly repaired.

### Many Poles Hit

Over a hundred poles fell on the 44 kv. line from Williamsburg to Winchester. The 44 kv. "wishbone" type wood pole line, running north and east out of Cornwall T. S. supplying Martintown, Apple Hill, Maxville, Alexandria and rural communities, was hard hit with over 150 poles down. The country roads were impassable in this area, and this added greatly to the difficulty of effecting speedy repairs. Service was restored to the Williamsburg-Winchester line on January 7, and to the Martintown-Alexandria line on January 13.

Farmers with electric milking machines were milking by hand, in some districts, and using the ancient lanterns to light their barns.

School children were the only ones who enjoyed "The Great Storm!" Many of the schools equipped with oil furnaces and "iron firemen" are electrically controlled, and these had to close for several days.





work in the Hydro laboratory, para Bradt looks into a refrigerator—not for milk or cold meat at a length of wire whose hetic insulation is being tested at a low temperature.

Accuracy down to the last detail is important on all tests made by these lady technicians at the Hydro laboratory. Here, Barbara is shown checking a measured piece of wire for weight.

Meet Mrs. Betty Davis, another young lady who is doing a man's job in the Hydro laboratory. When this shot was taken she had just placed a piece of wire in the machine which tests tensility.

"What's cooking?" enquired the humorist when Betty went to open the double-door of a laboratory oven. Instead of a roast, lengths of wire were found dangling inside. The heat's really turned on her.

### By GRACE J. CARTER, H.E.P.C.

**W**AR has wrought many changes in our everyday scheme of things. One of these changes is the manpower shortage with its attendant difficulties. But this has been alleviated to some extent by girls taking over men's jobs in many industries, and The Hydro-Electric Power Commission is no exception.

Using many types of electrical apparatus and precision instruments in the H.E.P.C. laboratory, smock-clad lady technicians are now engaged in vital war work. These young, but highly skilled girls are doing men's jobs—jobs which are linked with the efficient operation of tanks which may churn across the blistering sands of the desert, or plough through the biting blizzards of a Russian winter.

#### Doing Confidential Work

Tests conducted by these technicians can predetermine the efficiency of certain equipment installed in submarines, ships, planes and all types of military vehicles.

The wiring laboratory has three of these learner technicians—Mrs. Adeline Smith, Mrs. Betty Davis and Barbara Bradt. These girls are engaged almost exclusively on confidential war work. They have a thorough knowledge of

Ohms Law and all current specifications; are proficient in the use of knives, screw drivers, pliers, small hand tools, micrometers, microscopes, hydrometers and the slide rule.

There are between 150 and 200 different types of wire and cable tested in this laboratory, ranging from  $\frac{1}{8}$ " to 10" in diameter.

Tests carried out involve the use of a tensile testing machine, buffing machine, insulation resistance test equipment, cutting press, ovens, weighing scales, refrigerators, abrasion testing machine, pressure gauges and an oxygen bomb (this is not an explosive, but is used for testing rubber insulation to ascertain its ageing qualities).

Some of the tests entailed are standard flame test and refrigerator flexing, in which the flexibility of wire is tested at temperatures as low as 47 degrees below zero. Perhaps some of this wire will find itself in a tank on the Russian front.

When interviewed, Mrs. Adeline Smith was making a Preece galvanizing (zinc coating) test. This necessitates a knowledge of chemistry and the handling of chemical

*(Continued on next page)*



In the dark, the object at the back of Rhoda Browne might be mistaken for an over-sized football. It's an integrating sphere for testing light intensity of lamp bulbs.

Here Rhoda really finds herself on "a great white way." On these racks in the Hydro laboratory the life of lamp bulbs of all types is carefully checked.

The reading of certain graphs and meters and the keeping of records on lamp bulbs are all part of Rhoda's duties at the Hydro laboratory. Here she is shown "plugging in."



## PROJECT TO PROVIDE 400,000 HORSEPOWER

WHEN completed and in operation, the proposed new power development at Des Joachims on the Ottawa river will generate from 300,000 to 400,000 horsepower to serve Ontario's electric power requirements, Dr. T. H. Hogg, chairman and chief engineer, H.E.P.C. told members of the Electric Club of Toronto at the Royal York Hotel recently.

Dr. Hogg stated that this undertaking would get underway when agreements between the Ontario and Quebec governments and certain other details have been concluded.

The chairman explained that negotiations between the two provinces centred around the allocation of remaining power sites on the Ottawa river, whereby each province would take one-half of the available sites for its own unrestricted use. The development at Des Joachims, near Pembroke, would likely provide 300,000 horsepower initially, with later development raising this capacity to 400,000 horsepower.

Dr. Hogg described the Ottawa river sites as "the only remaining places in Southern Ontario where developments of a major character are possible." Apart from the Ottawa river, remaining undeveloped sites in Southern Ontario would provide about 200,000 horsepower, he stated, but these were in the nature of small scattered sites in Eastern Ontario and Muskoka.

By way of contrast, the speaker cited Canada's electrical output at the conclusion of the Great War and at the beginning of the present conflict. In 1918, the total production of electric power in Canada was 2,500,000 horsepower. By 1939 this figure had risen to 9,000,000 horsepower, and it is expected that during 1943, another 1,500,000 horsepower will have been added. "Practically all of this capacity," he said, "represents waterpower development."

Dr. Hogg questioned whether the provision of more electric power in Ontario would have resulted in any considerable increase in productive ability. Total maximum production, he pointed out, depended upon a balance of labour, transportation, and power. "These three elements," he declared, "must go along together, step by step, but present indications are that labour and transportation resources are approaching a point where further expansion does not seem immediately possible."

Touching upon power conservation, the chairman stated that last October the Commission was faced with a shortage of some 200,000 to 300,000 horsepower. Compulsory restrictions imposed by the Dominion Power Controller had effected a saving of 100,000 horsepower, while voluntary savings on the part of domestic consumers had accounted for approximately 60,000 horsepower. He added that Ontario is "likely to get by" from a power standpoint during the remaining months, but during January, February and March there would be the customary risk concerning water supply and ice, particularly in the Niagara river.

## CONVENTION SPEAKER

A. A. MOLINE,  
mechanical engineer  
of the Canadian  
Westinghouse Com-  
pany, Hamilton, who  
will address the forth-  
coming A.M.E.U.  
convention on the  
subject: "The Why  
and How of Conser-  
vation and Substitu-  
tion."



## GIRLS GO TO IT

(Continued from previous page)

glassware. Mrs. Smith, whose husband is in the Air Force, formerly taught school in Toronto.

Mrs. Betty Frances Davis, who was testing wire to determine its tensile strength, was formerly a physical instructor at the University of Saskatchewan, and later at the Y.W.C.A. of both Fredericton, New Brunswick, and Sydney, Nova Scotia.

Barbara Bradt, who attended the MacDonald Institute at Guelph, was busily engaged on an endurance test on a heater cord.

Rhoda Browne of the photometric section looks into all kinds of illumination problems. Her work includes testing lamps, fluorescent lights, head and tail lights for cars, occasionally infra red lights and candlepower distribution.

Selma Corbett of the meter division does detail work on the maintenance and distribution of meters; analyzing films; testing of switches and thermostats, and assists in the calibrating of meters. Miss Corbett has had normal school training, but prefers this scientific work.

As far as the annals of the Commission are concerned, this type of scientific work has never before been done by women.

Although laboratory work is exacting, these ladies are unanimous in their opinions that the variety of their tasks makes it intensely interesting and it is, therefore, enthusiastically attacked.

## Girls Doing Many Jobs

Throughout the various departments of the Commission, girls have taken over many jobs formerly performed by boys and men. Clerical positions involving highly concentrated detail, the gathering of statistics, reading of charts and graphs, filing and even the carrying of mail are among the duties now being performed by girls.

There are also seven learner "draftsmen" in the electrical engineering department, and one in the property department, learning the exacting art of engineering drafting.

It is interesting to note that these girls were required to have the same educational qualifications as if the jobs were being filled by boys and men.

Thus it will be seen that Hydro girls, in no small way, are helping to contribute to the "Arsenal of Democracy."





The Editor, Hydro News: In your December issue it was noted with interest that 204 enthusiastic garden devotees have found the Horticultural Section of the Ontario Hydro-Electric Club a happy medium for profitable discussion, not only of flora but also of fauna.

No further light is thrown in the subsequent report on the faunal activities of these 204 enthusiastic devotees. Are we, therefore, justified in assuming that such activities are limited to the discussion of the unwelcome visitations of the neighbouring canine and feline quadrupeds, or are we permitted to envisage J. E. S. crawling through the underbrush of his rockery stalking a lettuce loving rodent, or contemplate J. J. T. emulating Tarzan in his efforts to eliminate the unwelcome attentions of a bushy-tailed quadruped of active arboreal habits?

I submit sir, that either too much or too little has been reported. May we look forward to further information upon this interesting pursuit of our versatile garden devotees?—"Simple Simon."

Note:—It has been confirmed that members of the Horticultural Section of the Ontario Hydro-Electric Club, in common with many gardeners, are interested in fauna whose activities are often detrimental to cultivation of flora. Impulsive proclivities, which are characteristic of rambling canines, have been a source of particular concern to many members. The latter, we are advised, would be willing to discuss details with the interested gentleman who uses the nom de plume "Simple Simon."—The Editor.

## HYDRO'S IN THE BOAT RACE

(Continued from page 6)

"Just what is the secret of all this speed which is being achieved in modern shipbuilding?" was the next question. "Pre-fabrication," was the prompt response.

This means that the hull, superstructure and other parts are made before being fitted on to the ship. Following the launching, the craft is towed away for a "fit-out." Interpreted in simple language, this term means that boilers, engines and the other essential parts and equipment are installed.

While at the yard, Hydro News witnessed the christening of the last Canadian-built vessel launched in 1942, the ceremony having taken place on December 31. Practically every worker who could leave his or her job took a few minutes off to watch the trim craft glide sideways into the water off the well-greased ways as the trigger ropes were cut. Built for the Royal Navy and now bearing the name H.M.S. Octavia, she is one of the newer and better class of minesweepers. Soon she will take her place with other ships engaged in the dangerous day-in-and-day-out job of sweeping floating death and destruction from the seas.

In the place vacated by the Octavia, the shell of another ship is already taking shape as this great shipbuilding marathon speeds forward.

In common with other Ontario Hydro municipalities, the Toronto System will continue to play its full part in hastening victory. Hydro's in this race—in it to win.

## TRIBUTE IS PAID TO E. R. LAWLER

Hydro Men From Essex, Kent And Lambton Areas  
Honour H.E.P.C. Engineer At Dinner —  
Presentations Made—J. J. Jeffrey  
Addresses Gathering

**M**ORE than 200 municipal commissioners, managers, engineers, superintendents and Hydro employees in the Essex, Kent and Lambton areas joined in honouring E. R. Lawler, municipal engineer, H.E.P.C., at a dinner in the William Pitt Hotel, Chatham, recently.

Mr. Lawler, who has been engineer for the Windsor district for more than a quarter of a century, has been transferred to the Toronto Metropolitan section, succeeding F. T. Stocking, now retired.

During the evening the guest of honour was presented with a set of gladstone bags and two fifty-dollar war bonds, the presentations having been made by Norman Wilson, manager and secretary of the Amherstburg Public Utilities Commission, and R. S. Reynolds, manager and secretary of the Chatham Public Utilities Commission. Fred Hubbell, line superintendent of the Windsor Hydro, presided.

In expressing appreciation of the tributes paid to him, Mr. Lawler recalled that his first Hydro duties had been in Chatham. He recounted many interesting experiences, and predicted many important developments in the district after the war.

In an interesting address on the progress of Hydro and the evolution of electricity, J. J. Jeffrey, assistant chief municipal engineer, H.E.P.C., declared that there would always be Hydro as long as there were rivers and streams.

Those taking part in the proceedings included E. A. Ternan, Leamington; J. Clark Keith, Windsor; C. L. McMann, Sarnia; J. R. Dean, Wheatley, and the following superintendents from districts which were under Mr. Lawler's direction: F. V. Martin, Essex; C. F. Tumelty, Wallaceburg; B. H. Hankinson, Bothwell; S. A. Moffat, Forest; G. C. Allen, Sarnia; H. H. Pegg, Windsor; W. B. Ford, Blenheim; H. P. Green, Harrow; and H. E. Chapman, Kingsville.

An illuminated address bearing the names of all present at the dinner will be presented to Mr. Lawler.

## COMPLETES 30 YEARS' SERVICE

On behalf of the members of the H.E.P.C. property department, T. U. Fairlie presented a handsome sterling silver tray to S. W. Johnston, senior valuator of the department, who has just completed 30 years' service with the commission. Mr. Johnston, who made suitable acknowledgment of the gift, has the distinction of having driven the first Hydro survey stake at the town line between Pelham and Gainsborough townships in Welland county in 1908.



## Figures Tell Story of Growing Number of Domestic Users

OVER a period of 27 years, the number of municipalities operating their own Hydro utilities in Ontario has increased from 49 to 320, while the number of domestic consumers has grown from approximately 65,000 to more than 545,000.

These facts are shown in the domestic service tabulations which cover the period between 1914 and 1941. The tabulations in question, which are presented on this page, also show that the greatest advance was made between the years 1920 and 1923 when the number of Hydro municipalities increased from 166 to 206. At the same time consumption of kilowatt-hours during that three-year period recorded an increase of 145,000,000, while annual revenue all but doubled.

Between 1914 and 1941 average monthly consumption of electricity by domestic users shows more than an eightfold gain whereas the average monthly domestic bill increased by only \$1.14. Twenty-seven years ago, Hydro's domestic consumers were using 14,000,000 kilowatt-hours of electricity annually, and in 1941 that consumption had jumped to 1,168,000,000 kilowatt-hours.

Since the close of 1941, steadily increasing demands by an ever-expanding network of war industries in Southern Ontario culminated in the introduction of restrictions by the Dominion Power Controller last September. While these restrictions and voluntary saving on the part of domestic consumers in power shortage areas are helping to ease the shortage problem, Dr. Thomas H. Hogg, chairman and chief engineer, H.E.P.C., has pointed out that this conservation effort must be maintained and intensified if the Commission is to meet its primary wartime obligations without additional restrictions in the immediate future.

DATA FOR CITIES OVER 10,000 POPULATION

Year	No. of Municipalities	Annual Revenue	Kilowatt-hours Consumed	Number of Consumers	Average Cost per Kw-hr.	Average Monthly Bill	Average Monthly Consumption Kw-hr.
1914	12	\$ 614,925.00	12,646,400	55,597	4.86c	\$1.06	21.8
1917	19	1,063,264.00	36,693,100	107,248	2.89	.88	30.5
1920	21	1,926,924.00	84,328,000	154,186	2.29	1.11	48.4
1923	21	3,772,416.00	206,266,200	223,028	1.83	1.53	83.5
1926	21	5,374,069.00	324,290,285	255,109	1.66	1.80	108.0
1930	26	7,921,316.00	541,876,998	315,611	1.46	2.11	144.4
1933	26	8,495,321.93	595,211,863	330,597	1.43	2.14	150.0
1936	26	9,743,001.62	720,002,863	350,083	1.35	2.32	171.4
1939	26	9,672,757.10	827,446,879	366,179	1.17	2.20	188.3
1940	26	10,064,709.22	865,971,948	373,855	1.16	2.24	193.8
1941	26	9,848,031.78	872,472,075	362,486	1.13	2.26	200.6

DATA FOR TOWNS OVER 2,000 POPULATION

Year	No. of Municipalities	Annual Revenue	Kilowatt-hours Consumed	Number of Consumers	Average Cost per Kw-hr.	Average Monthly Bill	Average Monthly Consumption Kw-hr.
1914	19	\$ 90,330.00	1,414,500	7,410	6.38c	\$1.11	17.4
1917	27	180,075.00	3,824,600	15,731	4.71	1.01	21.4
1920	36	353,915.00	10,053,100	24,041	3.50	1.26	36.0
1923	43	651,499.00	25,411,300	34,135	2.56	1.57	60.1
1926	48	1,037,016.00	50,487,035	47,873	2.05	1.84	89.6
1930	53	1,468,194.00	73,234,125	58,490	2.01	2.10	105.0
1933	60	1,584,772.57	82,321,996	63,910	1.92	2.07	107.3
1936	57	1,460,916.64	80,678,385	61,102	1.81	1.99	110.1
1939	63	1,785,220.67	124,373,708	72,441	1.44	2.05	143.1
1940	64	1,884,922.20	137,002,007	75,460	1.38	2.08	153.0
1941	64	1,984,481.73	143,200,796	77,452	1.38	2.13	154.1

DATA FOR VILLAGES UNDER 2,000 POPULATION

Year	No. of Municipalities	Annual Revenue	Kilowatt-hours Consumed	Number of Consumers	Average Cost per Kw-hr.	Average Monthly Bill	Average Monthly Consumption Kw-hr.
1914	18	\$ 24,913.00	291,000	1,859	9.55c	\$1.10	13.1
1917	77	97,516.00	1,412,500	8,334	6.90	.96	14.0
1920	109	233,819.00	3,829,900	15,665	6.00	1.29	21.2
1923	142	531,505.00	11,249,100	29,689	4.72	1.59	33.7
1926	174	942,309.00	29,945,632	46,900	3.15	1.71	54.4
1930	194	1,363,210.00	55,917,187	59,159	2.43	1.95	80.1
1933	214	1,559,083.62	64,651,543	66,371	2.41	1.96	81.2
1936	219	1,718,548.21	81,291,076	71,372	2.11	2.01	94.9
1939	228	1,842,920.38	104,489,522	79,503	1.76	1.93	109.5
1940	227	1,955,659.04	112,914,882	82,199	1.73	1.98	114.6
1941	230	2,620,282.50	153,601,093	106,675	1.71	2.05	120.0

ALL MUNICIPALITIES TOTALLED

Year	No. of Municipalities	Annual Revenue	Kilowatt-hours Consumed	Number of Consumers	Average Cost per Kw-hr.	Average Monthly Bill	Average Monthly Consumption Kw-hr.
1914	49	\$ 730,168.00	14,359,100	64,866	5.08c	\$1.06	21.0
1917	123	1,340,855.00	41,930,200	131,313	3.20	.91	28.6
1920	166	2,514,658.00	98,211,000	193,892	2.56	1.15	44.6
1923	206	4,955,420.00	242,926,600	286,852	2.04	1.54	75.7
1926	243	7,353,394.00	404,722,929	349,882	1.81	1.79	98.4
1930	273	10,752,720.00	671,028,310	433,260	1.61	2.09	130.1
1933	300	11,639,178.12	742,195,402	460,878	1.57	2.10	134.2
1936	302	12,922,466.47	881,972,324	482,557	1.47	2.23	152.3
1939	317	13,300,898.15	1,056,310,109	518,123	1.26	2.14	169.9
1940	317	13,905,290.46	1,115,888,837	531,514	1.25	2.18	174.9
1941	320	14,452,796.01	1,169,273,964	546,613	1.24	2.20	178.3



## War Demands, "Shorter" Days Effect Hydro Load Increase

Wartime industrial expansion and a gradual lessening in the number of daylight hours caused Hydro's primary load to increase more than 54,000 horsepower during the month of November, 1942, over the previous month.

This also represents a 6.5 per cent advance, or 135,000 horsepower over the corresponding month of 1941, notwithstanding power conservation by compulsory and voluntary means.

Based on the maximum 20-minute peak horsepower load for the respective months, the Commission's summary portrays load conditions on all four H.E.P.C. systems and the Northern Ontario Properties. The Niagara system, serving the majority of Southern Ontario war industries, experienced a primary load increase of 8.6 per cent, or approximately 132,500 horsepower in excess of the November, 1941, demand. The total peak demand for primary load in November, 1942, was 2,221,119 horsepower, as against 2,086,165 horsepower for the same month last year.

Combined primary and secondary load demands for the four systems and the Northern Ontario Properties were also increased. The November, 1942, peak demand of 2,360,354 horsepower was 2.3 per cent greater than the 2,306,246 horsepower load recorded in November, 1941.

### PRIMARY AND SECONDARY LOADS

	Maximum 20-Min. Peak H.P. Nov., 1942	Nov., 1941	Per Cent. Increase
Niagara System .....	1,726,729	1,676,542	3.6
Eastern Ontario System ..	182,677	182,820	— .1
Georgian Bay System .....	47,855	48,385	— 1.1
Thunder Bay System .....	117,962	136,448	—13.5
Northern Ontario Properties	275,131	262,051	5.0
Total .....	2,360,354	2,306,246	2.3

### 37 BILLION KILOWATT HOURS PRODUCED IN CANADA IN 1942

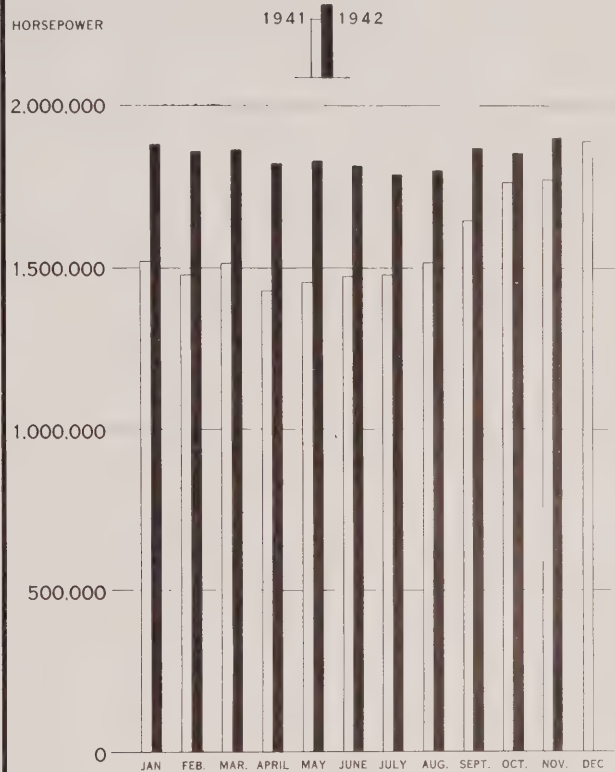
The gigantic strides made by the hydro-electric industry in Canada during 1942 have been recorded by the Dominion Water and Power Bureau, Department of Mines and Resources. In its annual review of hydro-electric progress, the Bureau states that new installations during the year aggregated 378,600 horsepower, bringing Canada's total hydraulic development to 9,225,838 horsepower.

Activities during the year featured the construction of new transmission lines; the interconnection of existing systems; and the diversion to primary use of large amounts of hydro-electric energy formerly sold for steam-raising in electric boilers. Rapidly mounting wartime power demands have been met also by the continuance of daylight-saving time throughout the winter months and by the diversion of vital electric power from certain non-essential uses to key industrial fields.

The monthly figures of output of central electric stations, issued by the Dominion Bureau of Statistics, indicates that a new record has been established in the generation of electricity. During the year 1942, more than 37 billion kilowatt-hours were produced.

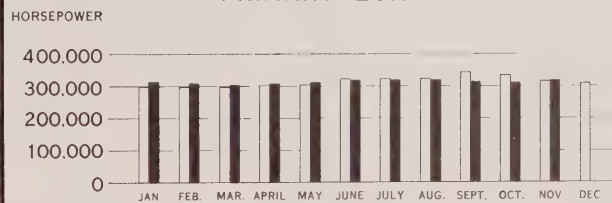
### SOUTHERN ONTARIO SYSTEMS NIAGARA — GEORGIAN BAY — EASTERN ONTARIO

#### PRIMARY LOAD



### NORTHERN ONTARIO PROPERTIES AND THUNDER BAY SYSTEM

#### PRIMARY LOAD



#### PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H. P.		PER CENT INCREASE
	NOV. 1942	NOV. 1941	
NIAGARA SYSTEM .....	1,673,995	1,541,421	+ 8.6
GEORGIAN BAY SYSTEM .....	47,855	48,385	— 0.1
EASTERN ONTARIO SYSTEM .....	182,677	182,820	— 1.1
THUNDER BAY SYSTEM .....	106,340	107,252	— 0.9
NORTHERN ONTARIO PROPERTIES	210,252	206,287	+ 1.9
TOTAL .....	2,221,119	2,086,165	+ 6.5



## MUNICIPAL LOADS, NOVEMBER, 1942

NIAGARA SYSTEM (25-Cycle)								
	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Acton	1,572	1,903	Essex	485	1,886	Palmerston	558	1,400
Agincourt	213	P.V.	Etobicoke Twp.	7,282	V.A.	Paris	1,690	4,604
Ailsa Craig	127	487	Exeter	627	1,654	Parkhill	177	1,029
Alvinston	95	649	Fergus	1,332	2,759	Petrolia	1,010	2,768
Amherstburg	752	2,704	Fonthill	199	860	Plattsville	127	P.V.
Ancaster Twp.	398	V.A.	Forest	503	1,562	Point Edward	1,691	1,199
Arkona	44	403	Forest Hill	7,128	12,172	Port Colborne	2,233	6,928
Aurora	1,236	2,821	Galt	11,569	15,126	Port Credit	868	1,934
Aylmer	842	1,985	Georgetown	1,571	2,452	Port Dalhousie	911	1,599
Ayr	184	760	Glencoe	182	763	Port Dover	412	1,790
Baden	462	P.V.	Goderich	1,476	4,674	Port Rowan	96	700
Beachville	674	P.V.	Granton	57	P.V.	Port Stanley	292	824
Beamsville	409	1,227	Grimsby	830	1,988	Preston	4,101	6,656
Belle River	186	836	Guelph	11,437	23,074	Princeton	119	P.V.
Blenheim	511	1,873	Hagersville	1,195	1,347	Queenston	82	P.V.
Blyth	107	662	Harriston	419	1,292	Richmond Hill	448	1,295
Bolton	184	629	Harrow	463	1,092	Ridgetown	607	1,986
Bothwell	122	683	Hensall	193	686	Riverside	1,140	5,235
Brampton	2,412	5,975	Hespeler	2,927	2,938	Rockwood	98	P.V.
Brantford	20,756	31,622	Highgate	85	322	Rodney	149	758
Brantford Twp.	1,089	V.A.	Humberstone	519	2,831	St. Clair Beach	75	138
Bridgeport	153	P.V.	Ingersoll	3,185	5,757	St. George	133	P.V.
Brigden	79	P.V.	Jarvis	203	513	St. Jacobs	264	P.V.
Brussels	146	784	Kingsville	578	2,453	St. Marys	1,375	4,009
Burford	188	P.V.	Kitchener	25,899	35,456	St. Thomas	7,568	17,045
Burgessville	42	P.V.	Lambeth	132	P.V.	Sarnia	11,087	18,599
Burlington	1,670	3,925	LaSalle	220	907	Scarborough Twp.	4,646	V.A.
Burlington Beach	432	1,474	Leamington	1,516	6,048	Seaforth	769	1,782
Caledonia	339	1,430	Listowel	1,402	2,984	Simcoe	2,414	6,340
Campbellville	38	P.V.	London	38,200	77,105	Smithville	155	P.V.
Cayuga	124	700	London Twp.	568	V.A.	Springfield	61	382
Chatham	6,645	17,184	Long Branch	1,305	4,258	Stamford Twp.	2,826	8,275
Chippawa	331	1,223	Lucan	159	643	Stoney Creek	247	933
Clifford	99	491	Lynden	97	P.V.	Stouffville	268	1,198
Clinton	618	1,879	Markham	311	1,175	Stratford	7,239	17,163
Comber	155	P.V.	Merlin	95	P.V.	Strathroy	1,390	2,834
Cottam	77	P.V.	Merritton	9,610	2,916	Streetsville	243	701
Courtright	42	355	Milton	1,398	1,915	Sutton	156	949
Dashwood	96	P.V.	Milverton	368	994	Swansea	3,239	6,907
Delaware	66	P.V.	Mimico	2,435	7,987	Tavistock	623	1,080
Delhi	604	2,430	Mitchell	642	1,670	Tecumseh	349	2,331
Dorchester	111	P.V.	Moorefield	39	P.V.	Thamesford	184	P.V.
Drayton	122	528	Mount Brydges	96	P.V.	Thamesville	188	816
Dresden	438	1,525	Newbury	31	288	Theford	103	598
Drumbo	92	P.V.	New Hamburg	577	1,441	Thorndale	71	P.V.
Dublin	45	P.V.	Newmarket	1,625	3,800	Thorold	2,194	5,284
Dundas	2,969	5,245	New Toronto	11,497	9,469	Tilbury	1,469	1,923
Dunnville	1,279	3,916	Niagara Falls	10,109	20,371	Tillsonburg	1,247	4,602
Dutton	251	830	Niagara-on-the-Lake	716	1,764	Toronto	345,442	657,612
East York Twp.	8,067	41,578	North York Twp.	9,454	V.A.	Toronto Twp.	2,799	V.A.
Elmira	1,061	2,069	Norwich	434	1,301	Wallaceburg	3,809	4,802
Elora	462	1,185	Oil Springs	186	541	Wardsville	33	221
Embro	138	420	Otterville	96	P.V.	Waterdown	207	867
Erieau	80	281				Waterford	489	1,294
Erie Beach	8	21				Waterloo	5,455	8,968
						Watford	360	1,023
						Welland	12,200	14,899



## MUNICIPAL LOADS, NOVEMBER, 1942

	H.P.	Popula- ation P.V.		H.P.	Popula- ation		H.P.	Popula- ation
Wellesley -----	114		Orangeville -----	708	2,558	Lakefield -----	330	1,301
West Lorne -----	222	768	Owen Sound -----	5,682	13,559	Lanark -----	75	686
Weston -----	4,832	6,165	Paisley -----	98	730	Lancaster -----	46	570
Wheatley -----	193	761	Penetanguishene ---	983	4,177	Lindsay -----	3,756	8,345
Windsor -----	48,608	104,415	Port Carling -----	112	520	Madoc -----	182	1,130
Woodbridge -----	613	946	Port Elgin -----	436	1,415	Marmora -----	128	1,004
Woodstock -----	8,550	12,339	Port McNicoll -----	84	950	Martintown -----	32	P.V.
Wyoming -----	67	538	Port Perry -----	260	1,175	Maxville -----	92	811
York Twp. -----	20,776	77,175	Priceville -----	10	P.V.	Millbrook -----	79	749
Zurich -----	123	P.V.	Ripley -----	110	420	Morrisburg -----	202	1,484
(25 and 66-2/3 Cycle)			Rosseau -----	29	305	Napanee -----	1,260	3,241
Hamilton -----	155,788	164,719	Shelburne -----	245	1,053	Newcastle -----	209	701
St. Catharines -----	28,710	32,559	Southampton -----	526	1,467	Norwood -----	136	710
Trafalgar Twp. -----	480	V.A.	Stayner -----	258	1,106	Omeme -----	134	630
(66-2/3 Cycle)			Sunderland -----	71	P.V.	Orono -----	80	P.V.
Bronte -----	170	P.V.	Tara -----	96	510	Oshawa -----	16,782	26,610
Oakville -----	989	3,869	Teeswater -----	131	873	Ottawa -----	34,487	150,861
GEORGIAN BAY SYSTEM			Thornton -----	24	P.V.	Perth -----	1,723	4,197
(60-Cycle)			Tottenham -----	95	532	Peterborough -----	11,692	24,977
Alliston -----	387	1,700	Uxbridge -----	301	1,480	Picton -----	1,116	3,400
Arthur -----	138	1,089	Victoria Harbour --	58	979	Port Hope -----	2,234	4,997
Bala -----	103	355	Walkerton -----	918	2,534	Prescott -----	1,290	3,283
Barrie -----	3,969	9,559	Waubaushe -----	69	P.V.	Richmond -----	65	428
Beaverton -----	195	941	Warton -----	240	1,750	Russell -----	62	P.V.
Beeton -----	127	617	Windermere -----	24	117	Smiths Falls -----	2,610	7,741
Bradford -----	225	1,041	Wingham -----	619	2,149	Stirling -----	258	947
Brechin -----	42	P.V.	Woodville -----	71	439	Trenton -----	5,230	8,183
Cannington -----	158	761	EASTERN ONTARIO SYSTEM			Tweed -----	203	1,181
Chatsworth -----	75	333	(60-Cycle)			Warkworth -----	65	P.V.
Chesley -----	494	1,812	Alexandria -----	192	1,976	Wellington -----	203	948
Coldwater -----	114	545	Apple Hill -----	41	P.V.	Westport -----	82	725
Collingwood -----	2,646	6,249	Arnprior -----	1,120	4,019	Whitby -----	1,442	4,236
Cookstown -----	76	P.V.	Athens -----	99	626	Williamsburg -----	86	P.V.
Creemore -----	119	661	Bath -----	37	325	Winchester -----	294	1,017
Dundalk -----	240	686	Belleville -----	6,770	15,498	THUNDER BAY SYSTEM		
Durham -----	369	1,874	Bloomfield -----	89	636	(60-Cycle)		
Elmvale -----	169	P.V.	Bowmanville -----	2,614	3,850	Fort William -----	16,870	30,370
Elmwood -----	58	P.V.	Brighton -----	370	1,462	Nipigon Twp. -----	238	V.A.
Flesherton -----	50	452	Brockville -----	4,399	10,576	Port Arthur -----	20,500	24,217
Grand Valley -----	138	645	Cardinal -----	253	1,602	NORTHERN ONTARIO		
Gravenhurst -----	1,146	2,261	Carleton Place -----	1,724	4,143	PROPERTIES		
Hanover -----	1,329	3,190	Chesterville -----	257	1,094	Nipissing District		
Holstein -----	13	P.V.	Cobden -----	79	643	(60-Cycle)		
Huntsville -----	1,128	2,943	Cobourg -----	2,196	5,907	North Bay -----	4,436	16,013
Kincardine -----	662	2,483	Colborne -----	189	960	Patricia District		
Kirkfield -----	23	P.V.	Deseronto -----	155	1,002	(60-Cycle)		
Lucknow -----	340	856	Finch -----	80	396	Sioux Lookout -----	300	1,967
Markdale -----	179	776	Frankford -----	146	1,095	Sudbury District		
Meaford -----	731	2,759	Hastings -----	93	823	(60-Cycle)		
Midland -----	4,760	6,764	Havelock -----	129	1,103	Capreol -----	226	1,660
Mildmay -----	118	764	Iroquois -----	220	1,123	Sudbury -----	9,865	32,731
Mount Forest -----	425	1,936	Kemptville -----	341	1,230			
Neustadt -----	44	431	Kingston -----	13,039	29,545			





**ELECTRICITY  
IS A  
WAR WEAPON  
*Save it!***

● One of the illustrations above indicates how electricity in the home is unwittingly diverted from war industries; the other shows a use of electricity in a plant where it is needed to produce the weapons of war.

● Electricity used unnecessarily in home, office or business deprives war plants of power required to produce the munitions for our fighting forces. There may be no war plants in your community, but the power you save can be made available to plants in other districts which need increasing quantities of electricity.

● Your wartime savings of electricity will not be reflected in a great reduction in your costs—because Hydro rates are low. But, by conserving electricity wherever possible, your saving, combined with that of thousands of other consumers, releases a tremendous flow of power. This is a direct contribution to the war effort.

● Electrical research today is opening the door to amazing new developments which will provide better peacetime living when Victory is won. In the meantime, use electricity sparingly—it has a great duty to perform—to help win the war of production.

**THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO**





HYDRO

CONVENTION CAVALCADE

**VOL. 30**

**FEBRUARY, 1943**

**NUMBER 2**





**ELECTRICITY  
IS A  
WAR  
WEAPON**  
*Save it!*

● Electricity plays a vital part in the manufacture of war weapons. Upon it, to a great extent, depends the steady flow of munitions needed by our armed forces. Electricity helps win the war of production . . . helps speed the great day of Victory.

The needless use of electricity in homes, offices and stores consumes vast quantities of power more urgently required in Ontario's war plants. In the kitchen, clouds of steam from utensils on the stove . . . an open refrigerator . . . indicate how electricity might be used unnecessarily. Wartime cooking calls for the use of fewer elements for a shorter period of time, and the prompt closing of the refrigerator door. So no matter where you live or work save electricity for the war plants—more guns, ships, planes and tanks must be produced.

Because of Hydro's low, graduated rates . . . your wartime savings of electricity may not be correspondingly reflected in your costs. But, combined with those of thousands of others, your savings in electrical energy units help release a tremendous flow of power . . . that makes a direct contribution to Ontario's war effort. Electricity is a war weapon . . . *save it!*

**THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO**



# HYDRO News

*formerly The BULLETIN*

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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## The Front Cover



"Convention Cavalcade" is the title of this month's composite front cover which portrays two different scenes at the recent O.M.E.A.-A.M.E.U. conventions in Toronto. The upper left photograph was taken at the banquet, while the other illustration shows the crowd leaving the luncheon which was attended by O.M.E.A. and A.M.E.U. delegates and members of the Electric Club of Toronto.

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February 1943

Number 2

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KENNETH A. CHRISTIE K.C.  
TORONTO



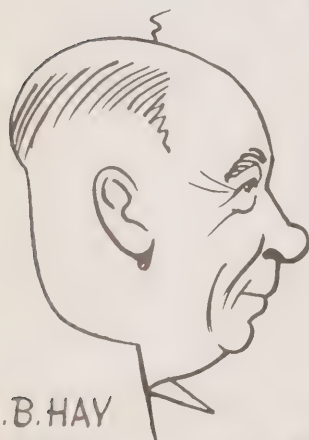
VERNON A. MCKILLOP  
LONDON

# CONVENTION *Caricatures*

BY *W.B. Mac*



DR. R.C. WALLACE  
PRINCIPAL QUEENS UNIVERSITY  
KINGSTON



J.B. HAY  
LONDON



R.B. CHANDLER  
PORT ARTHUR



P.R. LOCKE  
ST. THOMAS



A.G. JENNINGS  
EAST YORK



## GUARDIANS OF HYDRO

**W**HEN men of goodwill get together to exchange and discuss ideas designed to benefit a service to which their united efforts are dedicated, the results are reflected in the character and progress of that service.

Perhaps one of the most significant illustrations of this fact is to be found in the outstanding contribution made to Hydro service in Ontario over a long period of years by the members of the Ontario Municipal Electric Association and the Association of Municipal Electrical Utilities.

Just recently a record-breaking gathering of delegates met in Toronto for the annual conventions of these associations. In taking time off from arduous and responsible duties, they came with a vital wartime mission to perform and not as sight-seeing tourists. Through two crowded days, from early morning until late at night, they worked on committees, took part in constructive discussions, heard stimulating messages from eminent speakers and formulated important resolutions.

The keynote of both the O.M.E.A. and A.M.E.U. proceedings was one of high and firm resolve that Hydro, which has been the life blood of Ontario's peacetime industrial growth, must be unflagging and unfailing in its all-important contribution to the winning of the war.

As vigilant and experienced guardians of Hydro in their own municipalities, these delegates can be counted upon to perpetuate, in spirit and in deed, the principles and ideals which have moulded the great public ownership enterprise they serve.

---

## "A VITAL ASSET"

**W**IDELY known as a distinguished scholar and author who views with keen discernment the passing panorama of national and international events, Dr. R. C. Wallace, principal of Queen's University, Kingston, is a man whose opinions command attention and respect.

His address before the recent O.M.E.A.-A.M.E.U. convention banquet held the undivided interest of an attentive audience not by the quiet, sincere and inspiring style of

delivery alone. The message he brought was both stimulating and thought-provoking. This Scottish-born don sees Canada as a truly great land of glorious opportunity, and he sees in Canadians the high qualities and enterprising spirit which are synonymous with national achievement and greatness in their truest and finest sense.

In his address, Dr. Wallace spoke of Hydro's important contribution to industrial, rural and domestic life in this province. Ontario, through the initiative of Hydro, he said, had led the way in electrification of farms. No single factor apart from the establishing of equitable prices for farm products, he contended, could do more to stabilize farm life than the providing of electrical power. At the same time, he saw the availability of low-cost power as "a vital asset in the stress of the present war," and as "a fundamental factor in easing off the difficult transition from war to peace in Canada."

---

## KNOWLEDGE IS POWER!

**T**O say the least, it is embarrassing to be confronted with expressions and terms which are widely used and to have only a "foggy" notion about their meaning.

This is the predicament in which many laymen find themselves when trying to carry on an intelligent conversation with an electrical engineer about the functions of electricity and power plants. In discussing such matters, it is "second nature" for an engineer to employ terms which start a stream of question marks flowing in the lay mind.

Attention is directed to this subject in an article in this issue of Hydro News, entitled "'Watts' Horsepower?" The article discusses in a light vein the significance of many technical terms. At the same time, it seeks to emphasize the necessity for the layman knowing something about the horsepower and energy required to operate the various appliances in his home.

At present, when voluntary conservation of electricity is vital to the war effort, the layman can increase the effectiveness of his contribution by having an understanding of the engineering "slant." It is a case where knowledge is power in a very literal sense!



# CONVENTION HIGHLIGHTS

**Record Gathering of O.M.E.A. and A.M.E.U. Delegates — Addresses and Resolutions Stress Hydro's Vital Role in Helping Speed Victory and in New Era of Post-War Enterprise**

**A** RECORD-BREAKING gathering of more than 1,100 delegates attended the recent conventions of the Ontario Municipal Electric Association and of the Association of Municipal Electrical Utilities at the Royal York Hotel in Toronto.

During the two-day sessions, conducted under the direction of Kenneth A. Christie, K.C., Toronto, and Vernon A. McKillop, London, the presidents of the respective associations, the delegates completed heavy agendas of business and heard thought-provoking addresses from prominent speakers, while Dr. Fred J. Conboy, Mayor of Toronto, extended a cordial civic welcome.

Resolutions endorsed at both the O.M.E.A. and A.M.E.U. sessions reflected the general consensus of opinion that Hydro must play its full part, not only in hastening victory but in the period of reconstruction which will follow.

Many of the reports submitted reflected the fine co-operation and understanding which have characterized the relationships between both associations and the H.E.P.C., and enabled Hydro to maintain its all-important contribution to Ontario's war effort.

Ever-increasing demands for power, the necessity for

power conservation, the scarcity of vital materials, post-war planning and other wartime problems loomed prominently in the deliberations of both the O.M.E.A. and the A.M.E.U.

In his presidential address to the A.M.E.U. group, Mr. McKillop declared everyone associated with Hydro had reason to be proud of the achievements of the past year, and he also paid a warm tribute to Ontario's domestic consumers for their fine co-operation in conserving electricity.

## Urges Aid To Farmers

The problems facing many farmers were strongly emphasized by Mr. Christie, president of the O.M.E.A., who urged that the government modify its regulations to permit Hydro extensions in rural areas. "The farms, today," he said, "are facing a serious man-power shortage and if food production is to be maintained, it is imperative that farmers should receive help in some form. What more effective way is there, than to allow horsepower to replace man-power?"

After reviewing at length the part Hydro had played in the mobilization of Ontario industry for war pro-

*(Continued on page 6)*



The camera clicked as Dr. Fred J. Conboy, Mayor of Toronto, was extending civic greetings at the joint banquet of the O.M.E.A. and A.M.E.U. To the left of the picture are Dr. Thomas H. Hogg, chairman and chief engineer, H.E.P.C., Toronto; Dr. R. C. Wallace, principal of Queen's University, Kingston; Kenneth A. Christie, K.C., Toronto, who was re-elected president of the O.M.E.A.; and Vernon A. McKillop, London, now past president of the A.M.E.U., on the extreme right.



## CONTINUE POWER SAVING CONVENTION IS ADVISED

**All Resources Used to Greatest Possible Extent  
During 1942, Dr. Hogg Tells O.M.E.A.  
and A.M.E.U. Delegates**

**P**RESENT power restrictions must be maintained, and perhaps increased, to meet this year's war demands and possible emergencies, according to facts placed before delegates of O.M.E.A. and A.M.E.U. by Dr. Thomas H. Hogg at the recent convention.

"Taking what seems to be the most reasonable view of the somewhat meagre and certainly inconclusive data, it appears that the Commission should be prepared for a net increase in demand in December, 1943, from about 60,000 horsepower to 120,000 horsepower, or a range in primary demand from 2,017,000 to 2,077,000 horsepower for the Southern Ontario systems," he stated.

Dr. Hogg pointed out that the dependable capacity, including additions during the year, will be 2,030,000 horsepower is indicated," Dr. Hogg said. "On a load of under favourable water conditions. These figures included 65,000 horsepower expected to be procured from the DeCew Falls plant and an additional 20,000 horsepower expected from the Niagara plants because of improved conditions created by the Niagara weir, aided by generally higher water levels.

### Shortage Indicated

"Comparing the average of the demands with the dependable capacity, a peak shortage of 15,000 or 20,000 horsepower is indicated," Dr. Hogg said. "On a load of over two million horsepower it would be misleading to imply that estimates to any such degree of accuracy can be made, especially in the midst of so much that is uncertain. However, assuming that there is next winter a shortage of 20,000 horsepower, and that the full amount of 'dependable' capacity remains the same, this shortage would occur infrequently, for short intervals only, and, therefore, would be quite unimportant."

Dr. Hogg then went on to warn his listeners that the so-called dependable capacity is actually dependable only in a limited sense. Unusually bad water years, losses in generating equipment, or other vital equipment, might reduce it drastically at any time. Moreover, he pointed out, there is no assurance that a demand for one or more substantial blocks of additional power may not develop at relatively short notice, so there is the possibility that during the coming year a shortage of some significance might occur.

Reviewing the activity of the Commission during the past year, Dr. Hogg stated that a total of 129,000 horsepower was added to the power supplies in that period. That included 75,000 horsepower purchased from the MacLaren and Beauharnois companies, and 54,000 horsepower

### WANTED—A WAILING WALL!

It had to happen just when one of the most important convention pictures was being taken.

We had all the 1943 O.M.E.A. officers lined up for what we thought would be an interesting picture and, after the "shot" had apparently been taken, we discovered that a technical mishap, beyond the control of the photographer, had ruined the effort. Ever since we have been looking for a suitable wailing wall where we could give full expression to our feelings.

At the first opportunity, we are going to have another try.



### NEW A.M.E.U. EXECUTIVE

Within a short time after their election to office, the members of the 1943 executive of the Association of Municipal Electrical Utilities assembled for their first meeting. They were hard at work when the photographer dropped in, but stopped long enough to face the camera for the above picture. In the group, from left to right, are A. W. Taber, North Bay; S. W. Canniff, Ottawa, vice-president; F. A. Archer, H.E.P.C., Toronto, treasurer; R. S. Reynolds, Chatham; Vernon A. McKillop, London, past president; R. B. Chandler, Port Arthur, president; S. R. A. Clement, H.E.P.C., Toronto, secretary; A. B. Manson, Stratford; A. W. Bradt, Hamilton; R. J. Smith, Perth; and L. G. McNeice, Orillia. The two members missing from the group are C. A. Walters, Napanee, and J. E. Teckoe, Jr., Tillsonburg.

generated at the new plant at Barrett Chute on the Madawaska river. The Commission also had the benefit during the whole of last year, he explained, of the increase in Niagara water diversion, augmenting its power resources on the average by 135,000 horsepower, but not increasing the Commission's peak capacity.

### Loads Substantially Higher

Dr. Hogg then reported that, during 1942, loads were substantially higher than during corresponding months of the previous year. Except for the effect of mandatory and voluntary conservation that had taken place during the year, he claimed, the demand in 1942 would have exceeded that of 1941 by approximately 275,000 horsepower, representing a growth of approximately 14 per cent.

"All power resources available to the Commission were used to the greatest possible extent throughout the year," said Dr. Hogg. The total energy output for all systems was 11 billion, 675 million kilowatt-hours, exceeding all previous records by 11.5 per cent."

*(Continued on page 15)*





## CONVENTION HIGHLIGHTS

(Continued from page 4)

duction, and the steps which had been taken to meet unprecedented demands for power, Dr. Thomas H. Hogg, chairman and chief engineer, H.E.P.C., praised the work of the Commission's staff. "The record of the Commission," he said, "is largely one of faithful work by an efficient staff, led by engineers trained in the school of public service. Quiet accomplishment rather than spectacular achievement characterizes their work. Seldom indeed have their doings reached front page notice. But in this Hydro family gathering I should like to pay tribute to their work."

### Pays Tribute To Local Commissions

Dr. Hogg also made special mention of the splendid contribution made by local commissions and their staffs. He wondered if they and the Hydro consumers of the province fully appreciated the far-reaching importance of their power savings to Canada's war effort. "Without Hydro," declared the speaker, "this province would not rank as one of the United Nation's key arsenals, whose contribution has already made a mighty impact upon our enemies in practically every theatre of war."

In his address, given before a joint session of the O.M.E.A. and A.M.E.U., Dr. Hogg stated that no one could tell what the future held. It could be said, however, that restrictions now imposed in various ways would have



1—Included in this convention group are: N. E. Macpherson, R. E. Jones, L. W. Pratt, D. T. Flannery, T. E. Dietrich and F. C. Adsett, H.E.P.C.; W. C. Burch, Toronto; T. Metcalfe, Hamilton; and G. A. Brace, Toronto.

2—Men at work! They include: T. W. Houtby and Robert Scott, Welland; O. W. Harris, North Bay; R. W. Philip, Milton; Chas. Wilson, Acton; R. O. Quick, Brighton; Ken. Holdsworth, Etobicoke Twp.; A. E. Rumball, Clinton; Harold Hillier and G. E. Conn, H.E.P.C.

3—The principals in this study of concentration are F. E. Welker, St. Jacobs; A. G. Jennings, East York; Joseph Gibbons, Georgetown; and J. C. Anderson, Oshawa.

4—This scene suggests a brisk cash and carry business. Those within camera range include: J. F. Teckoe, Jr., Tillsonburg; A. P. Brander and A. D. Stewart, Wallaceburg; R. H. Martindale, Sudbury; G. A. Brace, Toronto; J. E. Teckoe, Niagara Falls; D. J. McAuley, A. B. Hayman, E. S. Frost, J. H. Caster, F. A. Archer, and G. E. Conn, H.E.P.C.

5—There were good speakers and good listeners at the recent conventions. Among the listeners here are J. F. Linn, and W. A. Blackburn, Stayner; F. F. Arnbuhl and J. B. Kitchen, Toronto; A. B. Scott, Galt; H. G. Hall, Ingersoll; B. J. Williams, Owen Sound; D. L. Regimbal, North Bay; Russell Moore, Brampton; R. L. Beckett, Brantford; E. S. Frost, A. S. L. Barnes and G. G. Argo, H.E.P.C.





to be maintained along with the voluntary savings by domestic consumers.

B. A. Trestrail, director of co-ordination, John Inglis Company, Toronto, in addressing a joint luncheon of the O.M.E.A. and A.M.E.U., told the delegates that they were "the key to our war effort," and that he wished to pay tribute to the fine work they were doing. "It would only take a breakdown in the generation or transmission of electricity to play the devil with our war effort across the country," declared Mr. Trestrail. "I would like to emphasize here and now to the whole of Canada the part power and power industries play in the war effort."

#### Sees Power As Post-War Asset

The joint banquet, a highlight of the two-day gathering, was featured by an inspiring address from Dr. R. C. Wallace, principal of Queen's University, Kingston, who discussed "Electrical Power in War and in Reconstruction." Dr. Wallace said that it had been the history of the development of power in Canada that, when a block of power was made available ahead of the needs of the moment, it was quickly absorbed by new industrial development. Probably, he pointed out, about one-third of the power now in use in Canada was working directly

(Continued on page 9)



6—The cameraman did a successful flanking movement and caught this group completely by surprise. Those in the forefront are: R. J. Sullivan, Woodstock; G. G. Cousins and J. A. Blay, H.E.P.C.; G. R. Conrod, Toronto.

7—When the camera was focused upon Dr. Thomas H. Hogg, chairman and chief engineer, H.E.P.C., and Dr. R. C. Wallace, principal of Queen's University, they were apparently discussing some object or matter of mutual interest.

8—See him smiling. He's R. B. Chandler of Port Arthur, the newly elected president of the A.M.E.U. To the left is C. J. Halliday of Chesley, and, on the right, is Dr. W. J. Chapman of St. Catharines.

9—Ladies too were present at the convention banquet. Included in the group 'round this table are Mrs. T. H. Hogg, Mrs. F. J. Conboy and Mrs. K. A. Christie, Toronto; Mrs. V. A. McKillop and Mrs. J. B. Hay, London; Mrs. M. P. Bengier, Port Arthur; Mrs. P. R. Locke, St. Thomas; Mrs. W. J. Chapman, St. Catharines; Mrs. G. S. Matthews, Peterborough; Mrs. W. H. McMillan, Thorold; Miss Islay Lambert, Cannington; Miss Kathleen Ciceri, Guelph; and Miss G. J. Carter, H.E.P.C., Toronto.

10—This banquet scene focuses attention upon many well-known delegates, including John Armour and Percy Longworth, Norwich; H. R. Henderson, Woodstock; A. A. Moline, Hamilton; W. D. Corcoran, F. G. Trull, M. P. Whelan and G. S. Parlour, Toronto.





## DISTRICT 8 COMMENDED AT O.M.E.A. CONVENTION

**Report Made on Efforts to Standardize  
Electric Range Switches**

STANDARDIZATION of electric range switches—originally advocated by District No. 8 of the Ontario Municipal Electric Association, and then endorsed by every other district in the association—was the subject of a report presented at the recent O.M.E.A. convention in Toronto.

After hearing the report, the delegates endorsed a resolution commending and congratulating District No. 8, headed by G. A. Edwards, on the progress which has been made.

It was recalled that at a district meeting held in Windsor last August, F. S. Rhoads, manager of the merchandising department of the Windsor Utilities Commission, had stressed the necessity for standardization of switches. At this meeting, Mr. Rhoads utilized a display board on which were mounted 120 different switches used for the repairing of ranges.

Attention was directed to the importance of the electric range in the home and it was explained that it was becoming increasingly difficult to service these essential appliances because of the scarcity or lack of both switches and burners.

### Meeting at Ottawa

The report also pointed out that last October a meeting was called in Ottawa by the Metals Controller to discuss metal economies as applied to range burners. Those in attendance at that meeting included G. A. Edwards, president of District No. 8, O.M.E.A., Mr. Rhoads and Clark Keith, of Windsor, along with some 30 representatives from municipalities, manufacturers and the H.E.P.C. Ottawa and Washington departmental officials both directed attention to the scarcity of metals, while an opportunity was provided for a discussion on the standardization of switches and problems involved in the securing of necessary parts. The opinion expressed, continued the report, indicated there was very little the Department of Munitions and Supply could do with respect to the standardization of switches, but it was stated that something could and should be done so that switch repair parts would be made available as a matter of metal economy. Since that time, frequent contacts had been made with Ottawa in an effort to solve the problem of switch repairs.

### Of Provincial Concern

"From this point," the report went on, "it might be stated that the question of switch standardization became a matter of provincial concern rather than one for District No. 8 to advocate on its own initiative. And so a joint committee of the O.M.E.A. and the A.M.E.U. met in Toronto on November 6 at which W. P. Dobson, chairman, and Col. W. R. McCaffrey, secretary, of the Code Committee of the Canadian Engineering Standards Association, were present. The vice-chairman of District No.

## McKILLOP SEES MEETING AS AID TO WAR EFFORT

**Hydro Can Look Back On 1942 With Pride,  
Declares A.M.E.U. President**

EVERYONE connected with Hydro can look back on 1942 with pride, declared Vernon A. McKillop in his presidential address before the recent annual convention of the Association of Municipal Electrical Utilities.

People who felt they were hurt by the power restrictions introduced last September are few and far between, he stated. The urgent needs of war, on the other hand, the speaker said, had strengthened the bonds of mutual co-operation and understanding between consumers and utilities. He also expressed the belief that if further restrictions were necessary, they would be accepted cheerfully and willingly by the consumers, the great majority of whom are actively supporting the campaign for the conservation of electricity.

### An Expression of Confidence

Continuing, Mr. McKillop said, "It appears to me as an expression of confidence in the value of this convention or annual meeting, that its cancellation this year was not even suggested to your executive. Some conventions have been withdrawn, but I think we may well feel that our meeting will be a definite contribution to the war effort. We may expect to return home better equipped to distribute the available supply of electricity where it will do the most good, and to assist in the conservation of vital materials."

### Can Serve Useful Purpose

The speaker told the A.M.E.U. delegates that the opportunity to have served as their president during the past year had given him a better understanding of the purposes, aims and possibilities of the association. Mr. McKillop expressed the conviction that the A.M.E.U. could serve a most useful purpose in promoting public welfare by working in co-operation with the O.M.E.A., the H.E.P.C., and other allied organizations.

"During the past year," continued the A.M.E.U. president, "several opportunities have been presented to work with both the O.M.E.A., and the H.E.P.C. Our relationship has been most cordial and constructive. Although our natural fields of endeavour lie along different channels, we have a common aim, and it is, therefore, important that there should be close sympathy and understanding among these groups."

8 presided, and the switch problem was outlined by Mr. Rhoads. On December 9, the O.M.E.A. was advised by the C.E.S.A. that authority had been granted for the organization of an appropriate C.E.S.A. committee to develop a standard switch."

In conclusion the report pointed out that while these problems had not yet been solved, more progress had been made during the past year than at any time in the history of the association.



## CONVENTION HIGHLIGHTS

(Continued from page 7)

for the war. When the war ended, Dr. Wallace declared, some of that power would be returned to the purposes from which it was drawn away. The rest would be an asset of the utmost value in stimulating new means of employment. "It will be, in my judgment," he said, "one of the fundamental factors in easing off the difficult transition from war to peace in Canada."

At the luncheon attended by O.M.E.A. and A.M.E.U. delegates and members of the Electric Club of Toronto, on the second day of the convention, the speaker was Ralph P. Bell, director-general, aircraft production branch, Department of Munitions and Supply, Ottawa. Mr. Bell revealed that three years ago Canada's aircraft industry had received its first contract for planes, and in that time, the Dominion had built and delivered 7,000 planes. Of that number 1,200 had gone to the various fighting fronts, the bulk of them being the famous Hurricane fighters.

### Britain's Utilities In Wartime

An interesting insight into the civilian protection set-up and industrial and utility operations in wartime Britain was given by David M. DeBard, vice-president,

(Continued on page 22)

- 11—Here, we identified the following: J. C. Doidge, J. F. McMillan and E. V. Buchanan, London; A. E. Rumball and Thos. Churchill, Clinton; E. R. Smithrim, Trenton; A. P. St. Louis, Riverside; Geo. Fulier, Watford; M. B. Hastings, C. W. Hookway and J. C. McFarlane, Toronto; C. A. Oglivie, Hamilton; N. R. Park, Mitchell; F. H. Plant, Ottawa; John Dibblee, C. E. Hodgson and R. B. Darrell, H.E.P.C.
- 12—Look closely and you can see H. R. Hatcher, Galt; O. C. Thal, Kitchener; Mrs. C. L. Ross, Trafalgar Twp.; L. A. Cain, C. C. Bothwell, Dave Logan and H. C. Smith, Toronto; F. C. Adsett, D. J. McAuley, D. G. Ferguson, H. J. Edwards and E. G. Maddock, H.E.P.C.
- 13—Among those spotted in this illustration are C. J. Moors, Fort William; Wm. Montgomery, Thamesville; F. S. Rhoads, Windsor; A. D. Stewart and A. P. Brander, Wallaceburg; W. R. Philip, Milton; Cyril Forster, Palmerston; R. J. Patterson, Kemptville; A. J. Magley and E. J. Cooper, Toronto; P. B. Yates, St. Catharines; Wm. Boddy, Oshawa; C. N. Brooks, H.E.P.C.
- 14—And here we find an interesting trio—J. F. Linn, W. A. Blackburn and Percy Glenn, all from Stayner.
- 15—The cameraman couldn't resist the smiles of this group. Those identified include J. L. Stonehouse, Floyd Rumford, E. H. Matthews and S. Ellerker, Forest; S. J. Wilson, Beamsville; R. J. Ellerker, Toronto; E. W. Smithson, G. E. Conn and F. A. Archer, H.E.P.C.





## POWER WILL BE ASSET IN POST-WAR PERIOD

**Dr. R. C. Wallace Sees Hydro As Fundamental  
Factor in "Easing Off" Transition  
From War to Peace**

THE conservation of Canada's water supply for its maximum use is one of the important responsibilities resting heavily on the public administration, declared Principal R. C. Wallace of Queen's University in his address at the joint banquet of O.M.E.A. and A.M.E.U. Such conservation, he claimed, will bulk heavily in the works projects which must be assembled in preparation for the days which will follow the close of the war.

"Hydro power sources are widely distributed across our country," Dr. Wallace pointed out. "Already 9,000,000 horsepower is developed from water flow in Canada—the largest per capita development of any country in the world. This is, however, not half of the accessible and available hydro power in Canada, and much less than half of the power that may one day be accessible and available. In this way we are more than fortunate. For more and more will industrial development depend on cheap power. The country that can offer cheap power will be to that extent more favourably placed in the expansion of industrial life which is essential to our future well-being."

### Post-War Period

Dr. Wallace commented briefly on the fact that Canada's large available power supply had proved a vital asset in the stress of the present war. "It was clear from the early days of this war," he said, "that a fundamental contribution that Canada would make was to be in munitions and war materials."

The speaker returned then to the discussion of post-war reconstruction and the part that hydro power will play. "It is probable," he stated, "that one-third of the power in use in Canada is working directly for the war. When the war ends, a large part of this great block of power will be available for other purposes."

"It will be an asset of the utmost value," he emphasized "in stimulating new means of employment. It will be, in my judgment, one of the fundamental factors in easing off the difficult transition from war to peace in Canada."

Dr. Wallace mentioned that a certain amount of decentralization of population would probably result after the war. Such a movement, he stated, was generally considered to be in the best interests of social progress, and he added that it would be largely helped by a continuance of the service that organizations like the H.E.P.C. of Ontario have provided to the smaller towns and villages.

### Rural Electrification

"And this raises other considerations to which I wish to refer," he said. "This province, through the initiative of the H.E.P.C., has led the way in the electrification of the farms. No single factor apart from the establishing

## NEW A.M.E.U. OFFICERS

Delegates to the annual convention of the Association of Municipal Electrical Utilities elected the following executive officers for the ensuing year: president, R. B. Chandler, Port Arthur, (acclamation); vice-president, S. W. Canniff, Ottawa; secretary, S. R. A. Clement, H.E.P.C., Toronto, (acclamation); treasurer, F. A. Archer, H.E.P.C., Toronto, (acclamation).

Directors: A. W. Bradt, Hamilton; A. B. Manson, Stratford; R. S. Reynolds, Chatham.

District directors: Niagara District: J. E. Teckoe, Jr., Tillsonburg; Central District: C. A. Walters, Napanee, (acclamation); Eastern District: R. J. Smith, Perth; Georgian Bay District: L. G. McNeice, Orillia; Northern District: A. W. H. Taber, North Bay.

## NEW O.M.E.A. OFFICERS

Officers elected at the annual convention of the Ontario Municipal Electric Association for 1943 are as follows:—Honorary president: Dr. T. H. Hogg, chairman and chief engineer, The Hydro-Electric Power Commission of Ontario, Toronto; honorary vice-presidents: T. W. McFarland, London; Jos. Gibbons, Toronto; F. Biette, Chatham; G. S. Matthews, Peterborough; C. J. Halliday, Chesley; John Kalte, Hanover; president: K. A. Christie, K.C., Toronto; past president: Dr. W. J. Chapman, St. Catharines.

District vice-presidents: No. 1—W. R. Strike, Bowmanville; No. 2—R. D. Boyes, Alliston; No. 3—C. H. Moors, Fort William; No. 4—A. G. Jennings, East York; No. 5—K. C. MacLeod, Stamford; No. 6—H. O. Hawke, Galt; No. 7—J. B. Hay, London; No. 8—G. A. Edwards, Windsor.

District Directors; No. 1—James Halliday, Kingston, and M. P. Duff, Belleville; No. 2—J. R. Beaulieu, Penetanguishene, and W. V. Brown, Meaford; No. 3—Dr. M. P. Bengier, Port Arthur, and R. C. Walsh, Port Arthur; No. 4—W. C. Andrew, Streetsville, and J. Edmonds, Mimico; No. 5—R. Pierson, Brantford Twp., and C. D. Hanniwell, Niagara Falls; No. 6—F. H. May, St. Mary's, and F. E. Welker, St. Jacobs; No. 7—P. R. Locke, St. Thomas, and H. R. Henderson, Woodstock; No. 8—Chas. Austin, Chatham, and J. T. Barnes, Sarnia.

Secretary-treasurer: Miss Kathleen Ciceri, Guelph.

of equitable prices for farm products, will do more to stabilize farm life than will the providing of electrical power to the farms of Canada."

"There is as well," he continued "an immediate repercussion on industry if a widespread programme of rural electrification is carried out. Farm appliances and household electrical equipment are in immediate demand." Such a demand, he affirmed, would do much to provide immediate and profitable markets for a fairly large number of industries in Canada at a time when it is of the utmost importance to absorb displaced labour without delay.

Dr. Wallace pointed out that all the development to which he had referred depends on cheap power, and that meant that profits must be plowed back into hydro-electric systems to extend facilities and to lower costs. Any other disposition of profits, he maintained, would be a short-sighted policy as far as power was concerned.



## URGES MODIFICATION OF POWER REGULATIONS

**Kenneth A. Christie Stresses Need For Hydro  
On Farms Facing Man-Power Shortage**

**O**PENING the recent O.M.E.A. convention, K. A. Christie, K.C., in his presidential address expressed the opinion that the time is now ripe to ask the Dominion Government to modify some of its restrictions on the use of electric power in order to permit Hydro extensions in rural areas of Ontario.

Mr. Christie pointed out that since the outbreak of war the association has done everything possible to co-operate in the matter of conserving power for war uses. "However," he stated, "the farms today are facing a serious man-power shortage and, if food production is to be maintained, it is imperative that they should receive help in some form. What more effective way is there than to allow horsepower to replace man-power?"

### Rates And Reserves

Commenting that the farm labour shortage situation was only one of several problems confronting those interested in the development and promotion of Hydro power in the province, Mr. Christie went into a brief discussion of the matter of reserves and rates. They are closely inter-related, he maintained, and together present a problem most difficult of solution.

"A reduction of rates is only justifiable," he said "if there are adequate reserves to guarantee the continuance of such lower rates. What constitutes sufficiency of reserves is the perplexing question to decide and here opinions honestly differ. In this connection we must remember that, generally speaking, the amount of surplus available to reduce rates is only a small fraction of the amount of reserves shown in the balance sheet."

Mr. Christie declared that if there were doubt in the matter, he would suggest that the trend should be in the direction of having too great a reserve rather than one too small.

"Particularly is this so," he said "in view of the abnormal conditions prevailing at the present time. If a depression should occur in the post-war era we may have to make substantial withdrawals and if our reserves are not adequate a serious impairment of the whole financial structure might result. People would lose confidence in Hydro and the principle of public ownership might be jeopardized."

Mr. Christie then drew attention to the fact that one of the objects of the association is "to unite together, as far as practicable, in the purchase of electric supplies and to endeavour to obtain, as far as possible, a standardization of equipment, accounts, operation and general management of municipal plants."

### Pooling Of Supplies

"This is one field," he commented "in which our association has not been as active as it might have been.

## TWO A.M.E.U. "ORIGINALS"



When P. B. Yates, manager of the St. Catharines Public Utilities Commission, and A. B. Scott, secretary of the Galt Public Utilities Commission, got together at the recent convention, the cameraman was quick to seize his opportunity with the above result. Both are "originals" of the A.M.E.U. and have contributed, in a large measure, to the success of the association. Mr. Yates came to the H.E.P.C. in 1908 and was head of the municipal department before going to St. Catharines in 1914. He was acting secretary and first president of the A.M.E.U. Mr. Scott has been serving at Galt since 1911. Both men modestly disclaim any credit for building up the A.M.E.U. They maintain that "it simply grew." When questioned about his early association with the A.M.E.U.—before it was known by that name—Mr. Scott replied, "I was just one of the under-strappers."

## ELECT OFFICERS FOR ENSUING YEAR

Reports bearing testimony to a successful year were tabled at the annual meeting of the Electrical Employers Association held in Toronto recently.

Officers elected for the ensuing year are as follows: president, H. L. Sanborn, Toronto; vice-president, R. Harrison, Toronto; secretary-treasurer and engineer, Wills MacLachlan, H.E.P.C., Toronto. Managing committee: W. L. Bird, Fort William; Dr. W. Doan, Harrietsville; R. L. Dobbin, Peterborough; B. V. Harrison, New Liskeard; Alph Hoover, Markham; J. E. Lawson, Niagara Falls; A. B. Manson, Stratford; W. H. Munro, Ottawa; J. W. Peart, St. Thomas; A. E. Pickering, Sault Ste. Marie; R. J. Smith, Perth; P. B. Yates, St. Catharines.

However, a start has been made this year and I am pleased to report a measure of success."

"District No. 7 has conducted an experiment in the pooling of supplies and, I am advised, that it has been quite successful. It would appear that with study and planning a greater co-operative effort along those lines might be made in the future."

Mr. Christie reported that it had recently come to his attention that the National Rural Electric Association of the United States had held its first convention in St. Louis. He suggested that the O.M.E.A. might be well advised to explore the possibility of exchanging ideas with organizations which are based on similar principles in other countries.

The speaker closed his address on a warning note. "Hydro still has its enemies," he stated. "There are certain individuals and organizations who are endeavouring to secure legislation that will adversely affect us. We must oppose such attempts with all our might and main."



## DISCUSSES POWER COSTS AT A.M.E.U. CONVENTION

**Engineering and Accounting Co-Ordination  
Achieves Very Desirable Results,  
States H. D. Rothwell**

**A**N important paper on the cost of power to Hydro municipalities was presented by H. D. Rothwell, district engineer, H.E.P.C., to delegates attending the recent A.M.E.U. convention in Toronto.

Prior to analysing the various factors on which power cost is based, Mr. Rothwell informed the gathering that the uniform system of accounting adopted throughout the municipalities, coupled with proper co-ordination between the engineering and accounting sections of the Commission, has achieved very desirable results.

"As the cost of power to a municipality is based on the average monthly load taken throughout the year, the actual cost to supply any customer on any system may be determined," Mr. Rothwell declared. "The principles followed are the same for municipalities, rural power districts and private companies served directly by the Commission."

The speaker then made a comprehensive analysis of the various headings into which power cost accounting is divided, including interim rates; share of capital cost of system; average horsepower supplied in the year; share of power purchased; share of operating, maintenance and administrative expenses; share of interest; share of provision for renewals; share of provision for contingencies and obsolescence; share of provision for stabilization of rates; share of provision for sinking fund; revenue received in excess of cost of power sold to private companies; total cost of power for the year; revenue received during the year from each municipality; and the amount remaining to be credited or charged to each municipality (i.e., the "13th" power bill).

As the details of the paper are of a technical nature and would necessarily lack detailed continuity in condensed form, engineers and accountants will be interested to know that copies of Mr. Rothwell's unabridged paper may be obtained by writing direct to the head office of the Commission, (Municipal Engineering Department), 620 University Avenue, Toronto.

### H. J. SURTEES PASSES

Harold J. Surtees, aged 72, of the municipal engineering department, H.E.P.C., who passed away recently following an illness, had been with the Commission for 30 years, and was well-known throughout the rural power districts of Eastern Ontario. Interment took place at Ottawa.

It costs \$5.46 a day to maintain a soldier in Canada, and \$7.11 to maintain him overseas.

## F-L-A-S-H!

**O**UR reporter, Howie Snoops, has cracked a big wartime secret. It appears that a lively campaign is brewing to make every Hydro employee a Victory Gardener. No doubt we will have more information about this campaign by the time our next issue goes to press and, it is possible, that those attending the open meeting of the Horticultural Club on March 4 may hear some advance details. The principal speaker will be Stuart Thompson, the well-known naturalist.

## CANADA'S AIRCRAFT INDUSTRY

Addressing a joint convention luncheon of the O.M.E.A. and A.M.E.U., R. P. Bell, director-general of the aircraft production branch, Department of Munitions and Supply, declared that in no other single sphere of the industrial side of the Canadian war effort does electricity play so vital and far-reaching a part as in aircraft.

The aircraft industry itself is not a large consumer of electricity as manufacturing industries in this country go, Mr. Bell pointed out, although a single plant may consume as much as 1,000,000 kilowatt-hours a month. Such amounts, however, were "flea bites" compared to the electric power required for the production of aluminum, the foundation stone on which Canada's aircraft industry is based. "There, electric power assumes real proportions," Mr. Bell emphasized.

### Built 7,000 Planes

He went on to recall that it was just three years ago that the aircraft industry in Canada received its first contract for planes for this war. "That was for a few hundred primary trainers," he said. "In the intervening period Canada has built and delivered approximately 7,000 planes. Twelve hundred of these have gone to the various Allied fighting fronts, the bulk of them being the famous Hurricane fighters."

Continuing, Mr. Bell contrasted the extent of the use of electricity in planes of the last war and those now in production. In the First Great War he recalled, there was only one use of electricity in most aircraft—the ignition of the engine, controlled by one switch. Now the Catalina coastal patrol bomber that is being made in Canada operates two generators with an approximate total capacity of 13,000 watts, enough electrical energy to supply a small block of dwellings with light, refrigerator, toaster, washing machine, vacuum cleaner and radio.

### Bomber's Electrical System

"The electrical system of this bomber," he stated, "involves over 1,800 separate wires; more than 9 miles of wiring; at least 75 different lights including interior, exterior and instrument panels; 11 inter-phone connections; over 100 junction and switch boxes; a two-burner stove for cooking; seven electric fans to circulate hot air from the heaters; ten different electrically operated temperature indicators; 25 various other electric gauges such as gasoline and oil supply, tachometer, voltmeters and ammeter."



# HYDRO MARCHES ON

By Dr. Thomas H. Hogg, Chairman and Chief Engineer,  
The Hydro-Electric Power Commission of Ontario

An address before the O.M.E.A.—A.M.E.U. Convention  
Royal York Hotel, Toronto, Tuesday, February 9, 1943.

I AM very glad to be with you again as it gives me the opportunity to review the year that has passed and to examine and discuss our mutual problems for the coming year. There is a good deal of ground to cover and most references must be somewhat brief.

You may recall that last year I reviewed the part that Hydro had been called upon to play, since the commencement of the war, in the mobilization of Ontario industry for war production. We started with the knowledge that more than ever before, our victory would depend upon our industrial productiveness. I reviewed the unprecedented expansion that had taken place in the two years of war, thus putting to use all our available supplies of power, and predicted that 1942 would continue this industrial expansion, and that by mandatory restrictions and voluntary savings we should have to meet a possible shortage of not less than 150,000 horsepower and possibly 300,000 horsepower.

I am now able to tell you that as a result of the steps taken, we were able to make the necessary reductions in our power demands and have safely passed the period of highest load for this winter, although we are not yet through the period of winter hazards.

As you know, daylight saving was continued and extended. As a result, the reduction in peak demand secured by this means in 1941, was maintained in 1942, without, however, having any appreciable effect on the average demand, or in other words, without reducing the demand for energy.

Then, last fall the Dominion Power Controller placed mandatory restrictions upon the use of electricity for non-essential purposes. You have all been made aware of the reduced sign and street lighting, the darkened store windows and show cases, the elimination of decorative lighting and the prohibition of the use of electric air heaters in stores and offices. There has also been restricted power consumption by the paper industry. But all these compulsory savings have been greatly augmented by voluntary savings made in response to an appeal enlisting the aid of all citizens.

These voluntary savings had to come chiefly from domestic services. Since the last war there has been a tremendous growth in the use of electricity in the home and nothing has contributed more to raising the standard of living in Ontario than the availability of ample supplies of low-cost electricity for domestic purposes. This is a good thing. It is indeed one aspect of the fuller way of life we are seeking to retain through a victory of the United Nations.

At the end of the last war the average monthly consumption per domestic consumer in Ontario was only about

30 kilowatt-hours. In 1941 it was between 5 and 6 times this amount. It was quite obvious, therefore, that the most suitable place to obtain savings in electric consumption was in the home. The Commission, therefore, conducted a program of conservation, employing newspaper advertising, billboard posters, radio talks, lectures and addresses, and a film, "Wardens of Power," which was specially made for the purpose.

There has been during the past year evidence of another influence at work which has tended to reduce the power demands, but one that is difficult to evaluate. Non-essential industry and commercial enterprise have had difficulty in securing men, materials and merchandise. Shrinkage in the demand for power for non-essential purposes has resulted from these difficulties, quite independently of mandatory restrictions or voluntary conservation from patriotic motives.

It is estimated that the reduced demand for power in December 1942, resulting from all forms of conservation and curtailment combined, was about 248,000 horsepower.

Taken in conjunction with the increase in our power supplies, these various forms of conservation and curtailment, by reducing the demand for non-essential purposes, virtually eliminated any shortage of power supply to war industry during 1942.

I should like at this point to pay tribute to the splendid co-operation of the citizens of the province in the conservation program. Suppliers, distributors and users of Hydro service all co-operated to ensure that vital war needs secured adequate Hydro service.

## New Supplies of Power

As predicted last year, 129,000 horsepower was added to our power supplies during the year. This included 75,000 horsepower purchased from the Maclaren and Beauharnois companies, and 54,000 horsepower generated at our new plant at Barrett Chute on the Madawaska river. We also, during the whole of last year, had the benefit of the increase in Niagara water diversion, augmenting our power resources on the average by 135,000 horsepower, but not increasing our peak capacity.

In December 1942 the dependable power resources of the combined Southern Ontario systems were 1,965,500 horsepower. The estimate of the demand for primary power that would have been made upon the Commission had mandatory and voluntary curtailment not taken place is 2,205,000 horsepower whereas the actual primary load after curtailment was 1,957,000 horsepower, or 67,000 horsepower more than the actual primary load supplied in 1941.



During 1942, loads were substantially higher than in the corresponding months of the previous year. Had it not been for the curtailment mentioned, the 1942 primary demand would have exceeded that of 1941 by approximately 275,000 horsepower, representing growth of approximately 14 per cent.

In the areas served by the Northern Ontario Properties, the average output for primary power purposes was somewhat less than the previous year. This was due largely to curtailment of gold mining activities, but on the other hand, increased quantities of power were demanded for the production of nickel.

### 11½ Per Cent Energy Increase

All power resources available to the Commission were used to the greatest possible extent throughout the year. The total energy output for all systems was 11 billion, 675 million kilowatt-hours (11,675,000,000 kw-hrs.), exceeding all previous records by 11.5 per cent.

### Prospects for 1943

During the current year we expect to add 65,000 horsepower from the DeCew Falls plant on the Welland Canal near St. Catharines, and the improved conditions created by the Niagara weir, aided by generally higher water levels, will add about 20,000 horsepower to the effective capacity of our Niagara plants.

Estimates, however, of the increase in power demand that will occur between now and next December are difficult to make. While the probable growth in the demand for large blocks of power can be estimated with a fair degree of accuracy, because such demands arise from the provision of increased industrial facilities which do not grow up without warning, the accumulative effect of a great many small increases in power demands of war industry, which increases are undoubtedly taking place, is very difficult to determine. Moreover, the counter-effect of certain influences that are causing shrinkage in the demand for power for non-essential purposes is even more obscure and uncertain.

Taking what appears to be the most reasonable view of the somewhat meagre and certainly inconclusive data, it appears that the Commission should be prepared for a net increase in demand in December 1943 from about 60,000 horsepower to 120,000 horsepower, or a range in primary demand from 2,017,000 to 2,077,000 horsepower for the Southern Ontario systems.

The dependable capacity, including the additions during the year, will then be 2,030,000 horsepower. Under favourable water conditions, actual resources might be as high as 2,070,000 horsepower, and then again they might be very much less than either of these figures.

Comparing the average of the demands with the dependable capacities, a peak shortage of 15,000 or 20,000 horsepower is indicated. On a load of over 2 million horsepower, it would be misleading to imply that estimates to any such degree of accuracy can be made, especially in the midst of so much that is uncertain. However, assuming that there is next winter a shortage of 20,000 horsepower, and that the full amount of "dependable" capacity remains available, this shortage would occur infrequently, for short

intervals only, and therefore would be quite unimportant.

Actually the so-called dependable capacity is dependable only in a limited sense. Unusually bad water years, losses in generating equipment, or other vital equipment, might reduce it drastically. The lack of any reserves would expose industry to the risk of curtailment whenever unfavourable fluctuations in capacity occur, as they inevitably do from time to time. Moreover, there is no assurance that a demand for one or more substantial blocks of additional power may not develop at relatively short notice, so there is a possibility that during the coming year a shortage of some significance may develop.

### Conservation Must Continue

Since no one can tell what the future holds, it may at least be stated that the restrictions now imposed in various ways must be maintained and voluntary savings by domestic consumers must continue. As I have pointed out, the problem of energy supply tends to overshadow that of horsepower load. Under wartime conditions with munitions plants working two or three shifts per twenty-four hours, the load factor increases and energy savings by domestic consumers are very important and in the aggregate can be quite substantial. They represent a transfer of electricity from less essential uses to vital requirements of our war industries. Conservation, therefore, must continue. We must secure and maintain a safe margin over our war requirements.

Another reason that makes it necessary to fortify our power reserves is that we never know when serious breakdowns involving a substantial section of our power supply or our transmission and distribution networks may occur. Twice during the lifetime of the Commission the whole of the capacity of the Ontario Power Plant was lost by flooding due to ice conditions. The first time was before it was owned by the Commission. On the second occasion the Commission had sufficient power reserves to prevent a serious shortage. Today, we are not in that fortunate position.

Every winter certain sections of our transmission networks are more or less severely damaged and from time to time fire hazard, which is always present, results in some damage to transformer or generating stations. Fires have at times destroyed generating plants and transformer stations of the Commission.

### Storm Hazards

This has been a winter of severe snow and sleet storms. These conditions have been experienced all over Ontario and partly for this reason, and because spectacular war news dominated our thoughts, public attention was not focused for long upon the most devastating snow and sleet storm in 50 years which swept through more than 3,000 square miles in the St. Lawrence Valley country. Following early December blizzards and heavy snow, there came on December 29 last, a snow and sleet storm which placed a heavy sheet of ice all along the St. Lawrence Valley for fifteen miles north of the river and south far into New York state. The vicinity of Cornwall suffered the most. The 44,000-volt lines out of Cornwall transformer station first developed trouble and all district patrolmen were out on these lines when the 110,000-volt line feeding the station went out of



service. These men had to be called by messenger because no telephone or telegraph communication was available. In a comparatively short time more than 200 line maintenance men were assembled in the district, toiling night and day to restore service. Country roads were blocked and poles and towers were covered with ice: more than 300 poles were down on the 44,000-volt line, in addition to hundreds of poles on rural lines. In the January issue of *Hydro News* many of you may have seen a fuller description of the results of this severe storm.

### After 1943

As to the fall and winter of 1944-1945 and subsequent years, prediction is not only more difficult, it is impossible. How long the war will last we do not know. One thing we do know; that practically the whole industrial war effort of Ontario depends upon Hydro power. Whatever else we do, therefore, we must ensure that all the power that can be utilized by our war industries is provided.

There is, however, a larger aspect to this problem of power supplies. There is, for example, a limit to the practical curtailment of civilian industry and indeed civilian consumption in general. For a good deal of non-war production is actually necessary. Not only that, but long continued deprivation of the little things of comfort and convenience resulting from Hydro service in the home and on the farm would have a depressing effect upon our spirits that would inevitably be reflected in our war effort, quite apart from the effect that a power shortage would have upon the actual production of munitions.

I will go further than this. If as a result of the increased facilities that have been provided for the production of raw materials and basic commodities, it becomes possible to increase the quantities available for uses apart from the fabrication of war equipment and production of munitions. I know of no better way in which this surplus could be utilized than in providing additional supplies of materials that would enable electrical service to be extended and used more fully, because there is nothing in our modern way of life which gives so much for so comparatively small an expenditure.

At the present time the provision of additional power supplies must of course be co-ordinated to the whole war effort of Canada. We have recently been interested in the great hydro-electric developments rapidly coming to completion on the Saguenay river in Quebec, long recognized by hydraulic engineers as one of the great power rivers of Canada. These developments are chiefly for the production of aluminum, and their justification lies in the fact that the power there developed can be delivered economically to nearby smelting plants, situated where supplies of the raw material, bauxite, can be brought by salt water transportation. It has been considered worthwhile to make these huge developments for the primary production of one strategic metal.

Where electricity is used for industrial process heating, the quantities of electricity used per ton of output are exceedingly large, far larger than in the case of processes utilizing mechanical power. It follows, therefore, that for the diversified industries of Ontario a relatively smaller

hydro-electric development strategically placed would be valuable, to insure that no part of Ontario should be short of power in the event of serious curtailment of power supply due to causes beyond the Commission's control. At present the Commission would like very much to have in its power reserves an additional 300,000 or 400,000 horsepower as an insurance against possible loss or failure of portions of its far-flung equipment.

### Ontario-Quebec Ottawa River Agreement

In this connection, and under ordinary circumstances, I would like to discuss at some length the Ontario-Quebec Ottawa River Agreement. However, as you are all aware, the legislation respecting this agreement is now being introduced in the Ontario Legislature, and under these circumstances I do not consider it appropriate for me to discuss the matter with you. I have no doubt that the press will make available the details and significance of the agreement as they are made apparent in the Legislature, and at some later date we shall have an opportunity to enlarge upon them.

### Purpose of Reserves

Now I want to turn for a moment to discuss briefly the subject of reserves. I have been asked to do this by some of your executives because there does not appear to be a full appreciation of the governing principles upon which Hydro reserves are set up.

In simple terms, the Commission's reserves are set up: 1—to retire debt; 2—to ensure continuance of a modern service; and 3—to prevent rates from fluctuating unduly. Let us consider these three functions in turn.

First, *Retiring Debt*—This function is taken care of by a Sinking Fund which accumulates the entire capital invested in a predetermined period of years for the purpose of amortizing the capital liability. The longest sinking fund period used by the Commission is 40 years. This means that as the successive yearly capital investments are fully paid for by sinking fund provision, lower rates may reasonably be expected. However, as much of the Commission's equipment is of comparatively recent construction, the full benefit may not be felt for some years after all expansion ceases, for new investments requiring provision of sinking fund, overlap the old and will continue to do so for a considerable period.

*To Ensure Continuance of a Modern Service*—This is the second function of the reserves—and it covers a wide range of operations. It is obvious that after plant has been built it is necessary to keep it up-to-date and to prepare to replace worn-out equipment when necessary.

For this purpose a *Renewals Reserve* is accumulated by allocating an annual sum which in the aggregate is composed of amounts based on the life expectancy of the various items of equipment.

The other reserve to ensure the continuance of a modern service is the *Contingencies and Obsolescence Reserve*, the purpose of which is to meet contingencies due to fires, storms, floods and any unforeseen eventualities for which provision has not already been made, including technological changes which, as you know, have in recent years shown marked strides.



This reserve is created by the accumulation of yearly amounts, obtained by an annual charge against operation, which are related to the probable risks involved.

*To Prevent Rates From Fluctuating Unduly*—This is the third function of our reserves—and of course is taken care of by the Rate Stabilization Reserve which has been created as an insurance against periods of financial stress or unfavourable business conditions.

The Rate Stabilization Reserve constitutes the Commission's first line of defence in its effort to avoid variations in unit costs. This may be principally brought about by a decline in the demand for power such as we may expect after the war during the period of readjustment from the very high levels of war activity.

Some of you may recall that during the latter part of the great depression, in the years 1932 to 1935, inclusive, large withdrawals were made from the Obsolescence and Contingencies Reserve for the purpose of stabilizing the rates to consumers by moderating increases in unit costs per horsepower to the municipalities as a result of decreasing loads.

The Stabilization Fund as now created was not then available and consequently the Contingencies Reserve of the Niagara System was reduced during the 4 years from nearly \$14¾ million to \$3¾ million. The existing Rates Stabilization Reserve will on similar future occasions avoid depletion of other reserve accounts to the extent that its available funds are used.

Interest improvement at 4 percent per annum is, of course, added to all these reserve balances.

I have not the time to analyze these reserves, but I hope that my few remarks have made clear to you the purposes for which they are set up. I might add that it is one of my firmest convictions that the maintenance of these reserves in the soundest possible condition is one of the greatest contributions which the Commission can make to the welfare of the partner municipalities and their consumers.

### Conclusion

Mr. Chairman, Gentlemen, I have reviewed, on this and other occasions, the efforts of the Commission in carrying out during the three years of war the desire, that I know has been dominant in your minds, namely, that adequate supplies of Hydro power should at all times be available for the war effort of Ontario. The record of the Commission is largely one of faithful work by an efficient staff, led by engineers trained in the school of public service. Quiet accomplishment rather than spectacular achieve-

ment characterizes their work. Seldom indeed have their doings reached front page notice. But in this Hydro family gathering I should like to pay tribute to the work of the Commission's staff during the year that is past.

I should also like to pay tribute to the local commissions and their staffs for the splendid contribution they have made since the war first started: they have co-operated not only with the Commission, but have ensured that, in their capacity as distributors, service to war plants was paramount.

When we think of weapons, machines and munitions for a war, we are prone to visualize only planes, tanks, ships, guns and shells.

Have you ever considered that you, in your respective municipalities, make up one of the greatest fighting forces in this war because you have in your hands one of the most potent weapons? I sometimes wonder if you and the Hydro consumers of this province fully appreciate the far-reaching importance of their power savings to Canada's war effort. I do not make these observations boastfully, but in a spirit of pride that we, the members of this great Hydro family and the people whom we serve, are privileged to make such a magnificent contribution to victory.

Undoubtedly Hydro is the vital nerve centre of the great humming network of Ontario's war industries. Without Hydro, this province would not rank as one of the United Nations' key arsenals, whose contribution has already made a mighty impact upon our enemies in practically every theatre of war. It is our duty to maintain and increase the intensity of that impact.

We have reached a crucial stage in this war. There must be no let-up in our efforts. We, you and I, and the loyal people of this great province, must go forward united in our determination to hasten the day of victory. Through our continued efforts, and through the fine voluntary co-operation of the public, we must make sure that we have all the power necessary to finish the job—speedily and effectively.

This is no time for smug complacency, but I would remind you that this great Hydro undertaking will play as dominant a part in post-war reconstruction as it is playing today in time of war. Over the past thirty years, sound administration and outstanding initiative have created in this province a magnificent achievement. Ontario's Hydro undertaking, a co-operative municipal enterprise, has successfully demonstrated how low-cost power can be supplied to serve the best interests of social and economic life. After the war we shall go forward to another victory: a better and fuller life—with the aid of Hydro power.

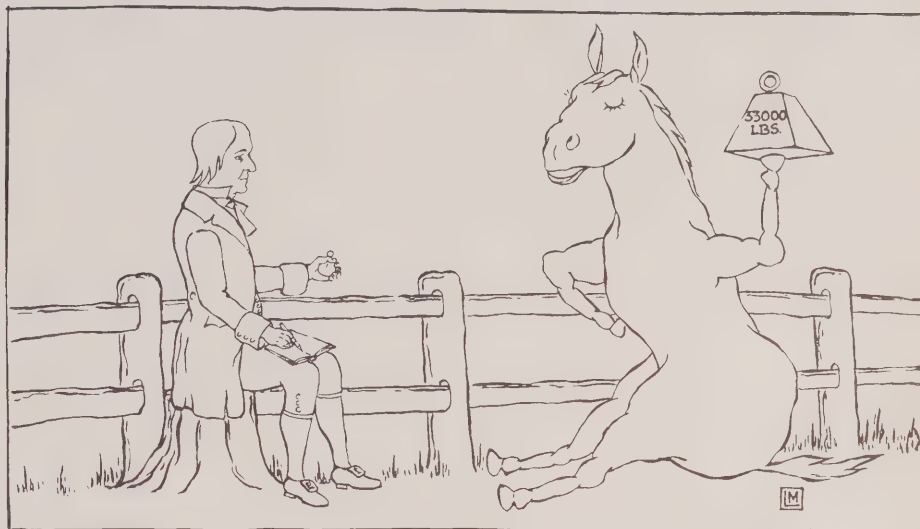




# "WATTS" Horsepower?

By A. M. PERE

After peering into the scientific past to determine how James Watt created the term "horsepower," the cartoonist formed this impression.



**J**T was James Watt.

This son of Auld Scotia did more than invent engines during his eighty-three years of life from 1736 to 1819. It was he who was largely responsible for starting all this business about watts, kilowatt-hours and horsepower.

Today, these are commonplace terms in the parlance of electrical engineers who use them with a glib nonchalance and savoir faire which create a grim sense of frustration in the minds of many laymen.

"Just what do these fellows mean anyway," groans the layman. "How did it all start?"

Without delving too deeply into the archives of science it would appear that horsepower must have budded on a quiet farm—possibly a Greenock farm—around 1770 or 1780 when the emphasis was more on "bustle" than "hustle."

## A Horse's "Power"

The eminent Mr. Watt — (and even laymen, despite their mental anguish, admit he was eminent)—was apparently spending a day down on the farm. It may have been a sleepy summer afternoon filled with the song of birds, the buzzing of bees, the clucking of hens and the aroma of the farmyard. Anyway, it seems logical to assume that in such an environment, this Greenock scientist pondered over the problem of telling the world how powerful his steam engine really was. Perhaps he picked on a big dray horse because it symbolized power or because it was familiar to most folk. At any rate, he picked on the dray horse as a sort of analogy, and induced it to do some

weight lifting. He watched closely, did some figuring—without the aid of a slide rule—and there was the answer. One powerful dray horse could raise a weight of 33,000 lbs. one foot in one minute or a weight of one ton (2,000 lbs.) a distance of  $16\frac{1}{2}$  feet in one minute.

And so horsepower was born!

It is now recognized as a standard unit of power, by which is measured the generating power of an engine. If the "why" and "how" of horsepower should not be familiar to the layman, the name of its creator will be perpetuated through the word "watt" (James Watt) which, according to any good dictionary, means an electrical unit of power. For those who are interested, the raising of a 33,000-lb. weight by a sturdy steed to a height of one foot in sixty seconds flat, not only adds up to one horsepower, but to 746 watts. (The engineer records it thus: 1 h.p. = 746 w.)

Next the layman runs smack into the cryptic symbols "kw-hr.," and wonders if they are fugitives from the phonetic world, poisonous drugs or just typographical errors. Having persuaded a highly orthodox but friendly engineer to remove the stilts from his eyebrows, the layman learns that "kw-hr.," is simply kilowatt-hour travelling incognito.

"That's fine," he muses, "but what the dickens is a kilowatt-hour?"

## "Hyphenated Befuddlement"

Writing in a recent issue of Electrical World, George Kerr sizes up this perplexing situation as follows: "How many of us right in the business (not to mention the public) can give a quick, clear, concise definition of a



kilowatt-hour? (as invidious and insidious a piece of hyphenated, polysyllabic, polyglot befuddlement as ever concocted.) Why, it ought to be as common as an old shoe! It ought to "register" as quickly as "a pound" of coffee, a "dozen" eggs or a "ton" of coal or a "quart" of milk. So we go to give a definition of a kilowatt-hour and start off something like this: 'Watt' is a term which indicates a rate of energy flow of one ampere of electricity at a pressure of one volt, and if this rate of flow continues for one hour the amount of energy produced or used is one watt-hour. Now kilo is the Greek word for a thousand."

"At this point there bursts out a pent-up interjection, 'Yeah! It sure is all Greek to me!'

### Illustration Tells Story

"Not to be destructive in our criticism, we offer a neat little definition of our meal ticket in an etching of scintillant lamps around a clock face with one hour blacked out. Just try it on the next one you meet—provided it's not an engineer. It's not necessary to carry a clock and ten bulbs around with you."

Accompanying Mr. Kerr's article is this "etching" or sketch showing the clock with the blacked-out hour and ten 100-watt bulbs round it. He goes on to explain, by means of this illustration, that a kilowatt-hour is the amount of current necessary to burn ten 100-watt bulbs for one hour (or anything else using 1,000 watts in an hour.) The kilowatt-hour is simply a unit of measurement just like a pound, ton, yard, dozen, quart, etc. Indeed, the term "unit" is used generally in Britain instead of "kilowatt-hour."

"And how about the place where the kilowatt-hour comes from?" asks Mr. Kerr. "We have a good name for that too, a 'steam electric generating station.' A station! Why, that's where you go to get the 5.15 train."

"Let's look at it from another angle. You're going through the country or a city or town and you ask 'what's that big building.' You are told 'why, that's the ———— soap factory' or the ———— shoe factory, or the ———— pencil factory, etc. Places where soap comes from, or shoes come from, or pencils come from. Did any one ever point out to you an electricity factory? If they did you'd know immediately it was a place where electricity comes from. You'd know right away what they meant. And that is really all a name is for, anyway. But we not only call our factory a 'station' but on top of it we call it an 'electric generating station'. Are you in the steam business too? Do you make steam there for people to buy, How do 'they' know we mean steam-driven? It is not advocated here that we substitute 'factory' for 'generating station,' but for general purposes and for the general reader it is clearer to say simply 'electric power plant.'

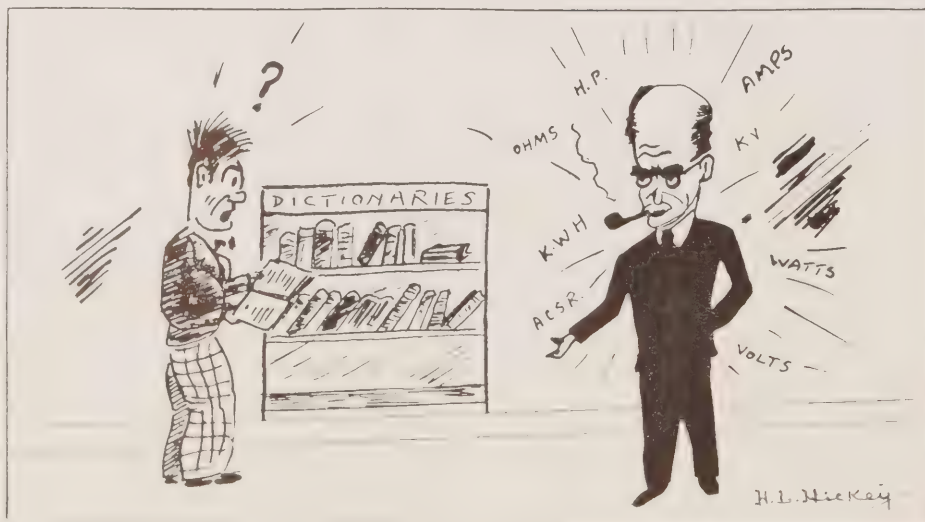
"We feel we have made great strides forward in 'dramatic presentation' when we print something like this —and say, 'As shown by the curve above—'

"Curve! What curve? Why, there's not a curve in it. The whole thing's made up of straight lines and angles!! Take a look at some of them and you'll find they're printed sideways, causing the reader to become a contortionist and twist his neck sideways to read it. Sure it takes more space to print it horizontally. But the way it is now is an irritation to the reader."

Mr. Kerr concludes his observations with the following "golden text:"

"So also ye, unless ye utter by the tongue speech easy to be understood how shall it be known what is spoken?"

"If then I know not the meaning of the voice, I shall be to him that speaketh a barbarian, and he that speaketh will be a barbarian unto me."— I Corinthians XIV: 9 and 11.



This is a cartoonist's conception of the reactions of a puzzled layman when an engineer "elucidates" a theory, or answers a "simple" question.



## CONTINUE SAVING POWER

(Continued from page 5)

Discussing conservation, Dr. Hogg declared, "Since no one can tell what the future holds, it may at least be stated that the restrictions now imposed in various ways must be maintained and voluntary savings by domestic consumers must continue. The problem of energy supply now tends to overshadow that of horsepower load. Under wartime conditions with munitions plants working two or three shifts per twenty-four hours, the load factor increases and energy savings by domestic consumers are very important and in the aggregate can be quite substantial. They represent a transfer of electricity from less essential uses to vital requirements of our war industries. Conservation, therefore, must continue. We must secure and maintain a safe margin over our war requirements."

### Industry Depends on Hydro

Calling attention to the urgency of fortifying the power reserves of the Province, Dr. Hogg pointed out the danger to plant and transmission facilities and equipment that can be caused by unusually heavy storms. "Twice during the lifetime of the Commission," he said "the whole of the capacity of the Ontario Power Plant was lost by flooding due to ice conditions. The first time was before it was owned by the Commission. On the second occasion the Commission had sufficient power reserves to prevent a serious shortage. Today we are not in that fortunate position."

Dr. Hogg declined to make any prediction as to the power situation beyond the end of the current year, pointing out that the uncertainty of the war's duration made any such prediction impossible.

"One thing we do know; that practically the whole industrial war effort of Ontario depends on Hydro power," he said. "Whatever else we do, therefore, we must ensure that all the power that can be utilized by our war industries is provided."

However, he did point out that there was a limit to the practical curtailment of civilian industry and even of civilian consumption in general. "A good deal of non-war production is actually necessary," he said. "Not only that, but long continued deprivation of the little things of comfort and convenience resulting from Hydro service in the home and on the farm would have a depressing effect on our spirits that would inevitably be reflected in our war effort, quite apart from the effect that a power shortage would have upon the actual production of munitions."

### Stresses Need For Power Reserves

"I will go farther than this," he continued. "If, as a result of the increased facilities that have been provided for the production of raw materials and basic commodities, it becomes possible to increase the quantities available for uses apart from the fabrication of war equipment and the production of munitions, I know of no better way in which this surplus could be utilized than in providing additional supplies of materials that would enable electrical



### RED CROSS CAMPAIGN

During March of this year the Canadian Red Cross Society will conduct a financial campaign to raise funds for its vital work in the next twelve months. An objective of \$10,000,000 has been set so that those valuable wartime services rendered by the Society may continue to bring relief and comfort to suffering humanity.

services to be extended and used more fully, because there is nothing in our modern way of life which gives so much for so comparatively small an investment."

Near the end of his address Dr. Hogg went on record to the effect that the Commission would like very much to have in its power reserves an additional 300,000 or 400,000 horsepower as an insurance against possible loss or failure of portions of its far-flung equipment.

He concluded with a brief discussion of a different kind of reserve, pointing out that the Commission's financial reserves are set up to take care of three vital needs: the retirement of capital debt, the assurance of a modern service and the prevention of undue fluctuation of rates.

"I might add," he said, "that it is one of my firmest convictions that the maintenance of these reserves in the soundest possible condition is one of the greatest contributions which the Commission can make to the welfare of the partner municipalities and their consumers."

# HYDRO'S ROBOT POWER PLANTS

By A. H. Hull

ELECTRICAL ENGINEER, H.E.P.C.

**W**ITHOUT the aid of human hands or the watchfulness of human eyes, nine Hydro power plants throughout the province operate quietly and efficiently, day after day, performing their many functions like a corps of mechanical robots. They work alone, behind the scenes, synchronizing their operations in flawless precision with the workings of other units of the system.



A. H. Hull.

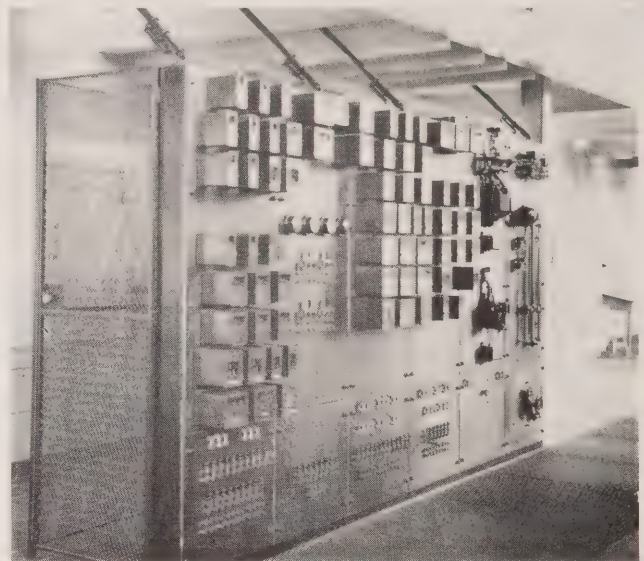
While all stations of this type are commonly known as "automatic," inasmuch as no operator is actually on duty at the plant, they are not literally self-operating in every case. Technically, they may be divided into two distinct groups, "fully automatic" and "supervisory-controlled."

## Synchronized With Parent System

In fully automatic stations, the controls are adjusted so that a unit will start, adjust the generator field to obtain a desired voltage, and automatically synchronize the unit with the parent system.

Supervisory-controlled stations, on the other hand, are operated at the will of an operator at a main control point, usually a generating station, which may be many miles away. Under this arrangement, an operator transmits an impulse over a supervisory control cable from the control point to the remote unattended station. These impulses actuate selective relays, which, in turn, operate the station's control equipment. In many cases, the necessary indications and meter readings are transmitted back to the operator at the control station through separate channels in the "supervisory" control cable.

The salient feature that distinguishes these two types of stations from the ordinary manually-operated plant is that no operator is actually present at any time. In general, the basic design and construction features of automatic stations follow closely the pattern of the manually-operated plants, but with the addition of special equipment such as auxiliary



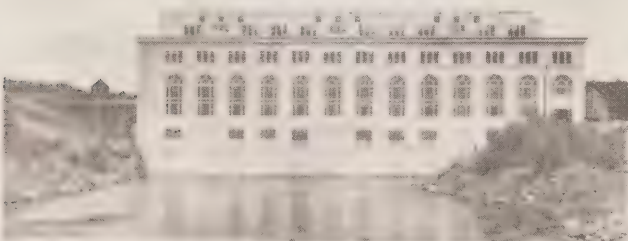
Automatic protection against short circuits, excess voltage, insulation failures and overheating of bearings and windings is provided by the various devices on the switchboard (above) used for one of the generating units at Hydro's Alexander power development.

control relays, remote metering facilities and more protective apparatus.

## Possibilities Foreseen

Automatic stations have been in operation in the United States for nearly 30 years, the principle of operation being an outgrowth of the automatically-controlled synchronous converter substation. These early installations were observed with keen interest by the technical men of that day who saw many possibilities in the development if it should prove practicable. One of the pioneering attempts—and one that proved highly successful—was an automatic plant installed by the Iowa Railway and Light Company at Cedar Rapids, Iowa, in 1917.

The first supervisory-controlled generating stations installed by The Hydro-Electric Power Commission of On-



From this generating station at Cameron Falls, operators can control the generating units in the Alexander development which is two miles away.



This is a general view of the Alexander power development which is under supervisory control from the Cameron Falls generating station, two miles upstream.

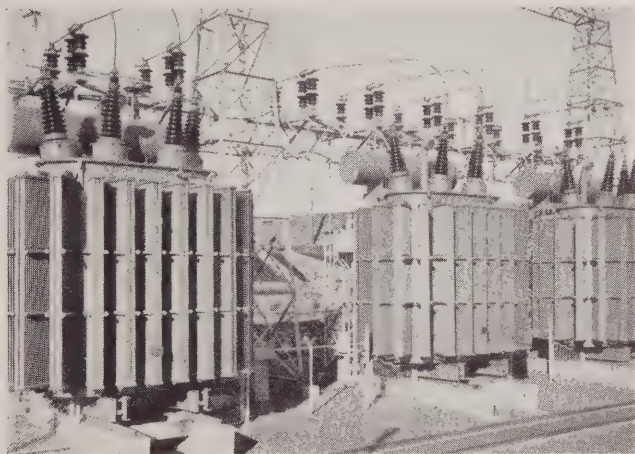


tario were located at Dams 8 and 9 on the Trent river, near Campbellford. The Dam No. 8 plant was placed in operation in 1924, and the Dam No. 9 plant the next year. The capacities of Dam 8 and 9 are 6,600 and 4,800 horsepower respectively, and both are under the supervisory control of the Ranney Falls generating plant.

From the standpoint of reliability of service, "automatic" stations have demonstrated that they perform as efficiently as manually-operated stations. The principal advantage in the installation of "automatic" plants is operating economy. "Automatic" operation dispenses with the necessity of providing a full staff of operators, usually four in number, although at certain of the Commission's plants a 24-hour man is on call should the need arise. All automatic and supervisory-controlled stations are inspected frequently by the operating department staff, and in these present war years vigilant guards are posted at plants of this type.

#### Controlled Stations

While automatic-controlled equipment might be designed also for stations of very high capacity, generating plants of medium or comparatively small capacity lend themselves most readily to this method of operation. The

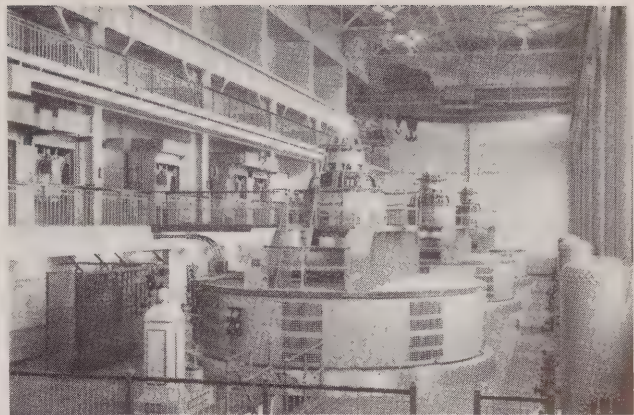


These outdoor transformers, at the Alexander development, are self-cooling. They are equipped with blower fans which automatically go into action when excessive heat is generated by the transformer windings during heavy load periods, and shut down again when the high-load period is over.

capacity and importance of larger stations make it expedient to have operators present to take care of load dispatching and complicated switching, as a degree of risk would be involved if manual operation were entirely eliminated.

The largest of the Commission's supervisory-controlled generating stations is the Alexander power development on the Nipigon river, about 67 miles northeast of Port Arthur. This plant has a capacity of 54,000 horsepower and its operation is controlled from the 75,000-horsepower Cameron Falls station, about 1¼ miles upstream. Power from these two large developments supplies the Thunder Bay system, which embraces the cities of Port Arthur and Fort William, several small towns and rural districts, and the Long Lac mining areas.

The latest supervisory-controlled installation is the Big Eddy development on the Musquash river, west of Bala. Placed in operation in the fall of 1941, it is controlled from



This illustration shows three 15,000-kv-a vertical-shaft generating units at the Alexander development. These units are operated by remote control equipment which permits an operator in the Cameron Falls plant, two miles away, to connect or disconnect them at will from the power system.

the Ragged Rapids generating station on the same river, and has a capacity of 10,000 horsepower.

There are three other supervisory-controlled plants in the Muskoka district. Two, the Trethewey Falls and Hanna Chute generating stations, of 2,300 and 1,600 horsepower respectively, are controlled from the South Falls development. The third, Bala No. 2 generating station, is controlled from the Bala No. 1 unit.

The Elliott Chute 1,800 horsepower generating station, located on the South river in the Nipissing district, is operated by remote control from Bingham Chute.

The Leaside condenser station, near Toronto, is operated as a remotely controlled fully automatic plant.

Automatic and remote control principles have been applied extensively to transformer stations feeding supply-distribution systems of metropolitan areas as well as in townships and rural areas.

Throughout the years, automatic stations have contributed substantially to the efficiency and continuity of Hydro service in Ontario.

#### MODERN DESIGN

The manner in which the results of engineering progress are translated into actual cash savings was exemplified recently.

A transformer built in 1912, after performing faithfully for 30 years, finally reached the point where repairs were necessary. In the case of the transformer in question, the routine materials check disclosed the startling facts that the modern design of transformer, of the same rating, used only: (a) half as much copper; (b) three quarters as much magnetic sheet steel, and (c) less than half the total weight of materials.

It, therefore, appeared that a customer could actually purchase a new and better transformer for less money than it would have cost him to rewind and repair the old one, at the same time releasing valuable scrap copper, steel and iron, weighing as much as two new transformers, indicating that many improvements in design have been made in the last 30 years.

## BLOOD BANK BENEFITS BY HYDRO "DEPOSITS"

**T**WO HUNDRED lives may be saved as a result of donations made to date by members of the Ontario Hydro-Electric Club to the Red Cross Voluntary Blood Service.

Since the club first answered the appeal for donors in February, 1941, there have been 205 enrolments, and a total of 370,000 cubic centimetres of blood has been given. Owing to enlistments in the armed services, however, the ranks of the donors has been temporarily depleted.

Through the enterprise of medical scientists, who have found a way to reduce red blood cells to a powder, donations from these club members, along with those of thousands of other donors, can now be stored for future use. This serum or plasma is placed in sealed containers and can be kept indefinitely. Another advantage of this processing, Red Cross officials state, is that it eliminates loss of precious time looking for blood donors when the need arises, while it obviates the necessity of matching blood types.

Many of the club "depositors" have already made eleven trips to the Red Cross serum "bank", going at two-month intervals and giving 400 cubic centimetres of blood on each occasion. The Commission's consulting surgeon periodically checks over the physical condition of these donors, many of whom wear the familiar bronze and silver buttons awarded by the Red Cross to signify three and six visits respectively.—G.J.C.

## THEY GOT THERE!

Cannington may not make a big splash on the map, but it lacks nothing in the way of enterprise.

Take, for instance, the dilemma which confronted the members of the Cannington Hydro-Electric Commission when they were preparing to leave for the O.M.E.A.—A.M.E.U. convention in Toronto.



The train, which usually serves that area, had been cancelled and the nearest stop was twelve miles away at Blackwater Junction. It looked bad until the party discovered that the Hydro utility truck was making a trip to that railway point. Overtures were made to the driver. "Barkis was willin'," and so boxes and chairs were placed on the truck which set out over the snow-covered highways with a huddled but happy complement of passengers. The truck arrived, the train arrived and the honour of Cannington was upheld at the convention.

This little incident was laughingly recounted to Hydro News by Miss Islay Lambert, who has been secretary-treasurer of the Cannington Commission for two years.

Although doing a man's work which keeps her quite busy, Miss Lambert modestly remarked, "Well, we have a job to do, and we do it."

In her leisure moments, she gets in some knitting for soldiers and takes an interest in music.

## A KINGSTON BARD

After listening to the address of Dr. R. C. Wallace, principal of Queen's University, at the recent O.M.E.A.-A.M.E.U. convention banquet, A. D. Nelson, accountant at Kingston Public Utilities Commission, was inspired to write these lines:

### THE BEST IS IN THE SHARING

*Hydro-kin and Muni kin  
Brothers are "beneath the skin,"  
For their mother is the people  
And their church the one whose steeple  
Flies the flag of good intent  
Wrought in shared accomplishment.  
Home and workshop a delight  
In the blessedness of Light.*

The following lines, also penned by Mr. Nelson, accompanied a communication received by the H.E.P.C. from the Kingston Commission:

*We do not ask how big the bill;  
We're always glad to pay.  
The service that the Hydro gives  
Makes night as useful as the day.*

## CONSERVATION OF MATERIALS

"Conservation is often the correction of past wastefulness occasioned by the normal overabundance of materials in this country," stated A. A. Moline, mechanical engineer of the Canadian Westinghouse Company, in an address before the recent A.M.E.U. convention.

Mr. Moline cited the extravagant use of tin that was common practice before the cutting off of supplies from Malaya and the Netherlands East Indies forced a savings campaign on industry. "In peace-time," he said, "we became accustomed to using pure tin and fifty-fifty lead tin solders.

"Today our organization is standardizing for the present on a solder of 15 per cent tin, one per cent silver and 84 per cent lead for general shop use. This solder has very good mechanical strength and good timing properties. In common with all substitute solders, however, it requires improved technique and greater care on the part of workers and manufacturers."

Continuing, Mr. Moline stated that, at the request of the War Production Board in the United States, the American Iron and Steel Institute's technical committee had made suggestions which had resulted in the development of a group of National Emergency Alloy Steels which required less alloy material than former types and, in some cases possessed better working qualities. These new steels, Mr. Moline declared, seem to be well on the way to satisfactorily replacing the higher alloy compositions that were once thought to be indispensable. He added that, in his opinion, the users of alloy steels should give careful consideration to the possibility of using the new NE steels.



# Around the Hydro Circuit

**V**ICE-PRESIDENT of the O.M.E.A., and chairman of District No. 6, **H. O. Hawke** has for many years been closely identified with Hydro affairs. A scion of Hawkesville, Ontario, where his family were pioneers, he migrated to Galt where he attended the Collegiate Institute and later entered the insurance business.



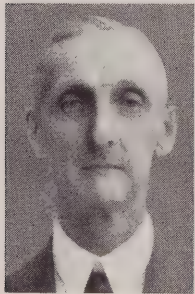
H. O. Hawke

Mr. Hawke has been deeply interested in Hydro since its inception. He has been active on the Galt Commission since 1923 and has served the O.M.E.A. in a number of capacities. In 1931 he was appointed chairman of the O.M.E.A. insurance committee, and at the winter convention of 1933 he was elected to the executive of the association. He became a director of District No. 6 in 1940 and at the annual convention of the association the following year he was re-elected to the executive.

The chairmanship of District No. 6 fell into his capable hands in 1941, and he was recently elected to this office for another term. He was named a vice-president of the O.M.E.A. at its 1942 convention.

An energetic personality in the public life of Galt, Mr. Hawke has served on the Town Planning Commission and in the past has been a candidate for the legislature. A devotee of sheep farming and fishing, he declares his first hobby is Hydro.

**A** DIRECTOR of the O.M.E.A., and an executive member of the Eastern Ontario Municipal Electrical Association, **Morley Duff** migrated to Belleville from Simcoe County in the year 1913. Mr. Duff was born near Barrie, Ontario, in which town he later resided and attended high school.



Morley Duff

For a number of years, Mr. Duff was employed by the town of Barrie, being responsible for the financial affairs of the Electric Light and Waterworks Departments. In 1907 he entered the service of the Grand Trunk Railway (C.N.R.) in nearby Allandale, where he acted as accountant. His value to the railway resulted in his promotion to the position of chief clerk of the Belleville divisional office in 1913, in which capacity he was engaged until his retirement in 1937.

As a citizen of Belleville, Mr. Duff took an active interest in municipal affairs, being elected alderman for the years 1926 and 1927. The following year he was elevated to the mayoralty.

Mr. Duff was appointed a member of the Hydro-Electric Commission of Belleville (later the Public Utilities Commission) in 1932 and has served continuously since that time. He brings to his O.M.E.A. affairs a background of municipal administration and a successful career in business.

**A** NATIVE of Gateshead-on-Tyne, **J. R. Pattison** came to Canada in 1907, ultimately arriving in Fort William, Ontario. His interest in civic affairs was soon made manifest and in the intervening years, he has been one of the northern city's outstanding citizens.



J. R. Pattison

Mr. Pattison, who has been a member of the Fort William Hydro-Electric Commission for nine years, was recently elected to a further two-year term, and was appointed chairman in recognition of his past services.

For 35 years a trade union member, he served for two years on the Ontario executive of the Trades and Labour Congress of Canada. He is a member of the Canadian Order of Chosen Friends, and in his earlier days,

was an athlete of merit.

Being an indefatigable soccer player, Mr. Pattison was a member of the Canadian Pacific Club that won the Canadian title in his playing days. His sports activities also included lacrosse, while his present association with active sport is confined to horseshoes.

A popular figure in Fort William, Mr. Pattison is keenly interested in all matters pertaining to Hydro.

**T**HE new vice-president of District No. 3, O.M.E.A., is **Clarence Herbert Moors**, who has been a member of the Fort William Hydro Electric Commission continuously since 1937. This honour was conferred on him at the recent association convention in Toronto.



C. H. Moors

Hailing from south of the border, Mr. Moors was born in Wisconsin, and it was in 1908 when he first set foot on Canadian soil. He heeded the romantic call of "Timber!" and for 10 years served as scaler with the Pigeon River Lumber Company. While in this position Mr. Moors gained wide repute in Thunder Bay timber circles. In 1919 he established his own business in Fort William, the Mount McKay Fuel and Feed Company, which has grown successfully under his efficient direction.

Mr. Moors' interest in municipal affairs was not of the passive variety, and from 1919 to 1925 (with the exception of one year) he was a member of city council. He served on the Board of Education from 1929 to 1932, and in 1937 was elected to the Hydro-Electric Commission, which position he has held ever since.

Service club activities and civic matters occupy a prominent place in Mr. Moors' agenda. He is an enthusiastic sports follower, particularly rowing and aquatics generally, and among intimates is affectionately known as "Sandy".

# 100 Employees Qualify For Q.C.C. This Year

**Names Are Announced By S. L. Eisenhofer,  
Secretary Of The Club**

This year approximately 100 employees of The Hydro-Electric Power Commission of Ontario will complete 25 years' service with the Commission and qualify as members of the Quarter Century Club, according to S. L. Eisenhofer, H.E.P.C., Toronto, secretary of the club.

The names of these new members are listed alphabetically by months, the figure in brackets after each name indicating the day of the month on which 25 years' service will be completed.

In issuing the following list, Mr. Eisenhofer has asked that he be notified if any eligible employee has been overlooked:

## JANUARY

**F**—Farrow, E. A., Toronto, (2); **F**erguson, A. C., Fraserdale, (2); **F**lommerfelt, Cyrus, Sr., Chippawa, (14); **H**—Harrison, F. L., Toronto, (2); **J**—Jackson, Walter, Niagara Falls, (22); **L**—Long Russell, Campbellford, (4); **M**—More, H. C., Toronto, (14); **W**—Woodley, Miss Keitha, Belleville, (14);

## FEBRUARY

**M**—McNamara, J. H., Belleville, (18); **R**—Rowley, John, Niagara Falls, (19); **R**ussell, W. E., Toronto, (1); **W**—Walker, Miss F. D., Toronto, (12); **W**ilson, Victor, Niagara Falls (1);

## MARCH

**A**—Allen, G. C., Sarnia, (30); **B**—Brown, E. P., Toronto, (7); **B**urley, Arthur, Niagara Falls, (25); **F**—Fortier, Alfred, Niagara Falls, (28); **L**—Lightbody, Robert, Toronto, (8); **Y**—Yorke, W. E., Niagara Falls, (16); **Y**oung, T. R., Niagara Falls, (14);

## APRIL

**C**—Carphin, D. M., Toronto, (8); **C**lark, A. T., Toronto, (1); **D**—Dowds, William, Toronto, (8); **F**—Flannery, D. T., Toronto (18); **M**—MacPherson, Miss Tessa, Toronto, (15);

## MAY

**B**—Bradshaw, G. H., Toronto, (1); **C**—Chandler, F. H., Toronto, (1); **C**hisholm, T. H., Toronto, (19); **G**—Grear, Mrs. L. I., Toronto, (1); **H**—Hilliam, Samuel, Toronto, (2); **L**—Leeming, H. H., Toronto, (1); **L**ogan, Miss O. L., Niagara Falls, (1); **M**—MacKintosh, James, Toronto, (27); **R**—Risler, William, London, (27); **S**—Scott, D. E., Windsor, (1); **S**tephens, C. B., Toronto, (22); **S**taford, R. H., North Bay, (10); **W**—Winson, R. T., Toronto (10);

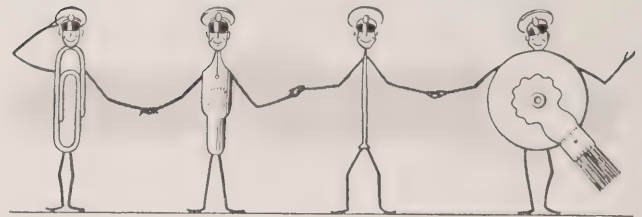
## JUNE

**A**—Armstrong, C. H., Toronto, (1); **A**rmstrong, W. A., Toronto, (10); **C**—Cronkhite, D. S., Toronto, (17); **C**urrell, Miss M. M., Toronto, (10); **D**—Dodds, W. S., Toronto, (17); **D**uffy, D. J., Toronto, (11); **M**—MacKenzie, J. L., Niagara Falls, (24); **M**acPherson, H. M., Toronto, (1); **P**—Pouchie, Michele, Niagara Falls, (6); **R**—Rice, A. R., Toronto, (1); **S**—Silcox, H. R., Toronto, (1); **S**mith, N. S., Niagara Falls, (1);

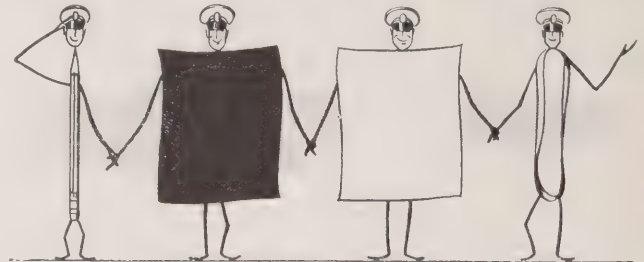
## JULY

**C**—Carradus, F. G., Toronto, (17); **G**—Gray, R. J., Toronto, (22); **H**—Hickling, Miss Phyllis, Brockville, (1); **K**—Kerr, H. F., Niagara Falls, (16); **L**—Lane, H. H., Toronto, (1); **M**—McCaw, H. J., Toronto, (2); **M**cdowell, E. R., Niagara Falls, (14); **P**—Pomeroy, W. H., Toronto, (16); **P**oste, G. W., Belleville, (1); **S**—Searway, N. A., Toronto, (4); **S**tark, Miss E. R., Toronto, (2); **W**—Wood, E. M., Toronto, (21);

WE ARE IMPORTANT TO VICTORY.



CLIPS	PENS	PINS	ERASERS
"I'm 'Clippy'— Hang on to me and I'll hang on for you."	"I'm 'Penny'— I'm mightier than the sword, so keep me."	"I'm 'Pinny'—A sharp little fel- low am I, worth using again."	"I'm 'Rubby'— Go easy on me and I'll last much longer."



PENCILS	CARBON PAPER	PAPER	RUBBER BANDS
"I'm 'Pixy'— I'll work for you 'till I shrink to nothing."	"I'm 'Carby'— Handle me with care and I'll stand a lot of wear."	"I'm 'Pulpy'— Sure, I'm im- portant, too; I spread the good word."	"I'm 'Stretchy' —I'll go a long way for you more than once."

*Reproduced from "About the First"—First National Bank,  
Boston, Massachusetts.*

## AUGUST

**B**—Bain, James, Toronto, (26); **F**—Frost, E. S., Toronto, (22); **G**—Gray, J. A., Toronto, (9); **H**—Hodgson, E. A., Chatham, (14); **K**—Kells, M. F., Niagara Falls, (16); **K**nisley, G. V., Cameron Falls, (30); **M**—Menzies, H. G., Toronto, (12);

## SEPTEMBER

**B**—Bleecker, H. E., Campbellford, (23); **B**uemi, John, Niagara Falls, (1); **C**—Chalmers, Percy, Niagara Falls, (16); **F**—Forsythe, S. H., Bala, (9); **H**—Hanley, A. C., Kingston, (1); **H**erbold, D. G., Chippawa, (18); **H**odge, E. H., Niagara Falls, (9); **M**—Morgan, J. P., Toronto, (23); **M**acDonald, H. A., Campbellford, (27); **O**—O'Connor, A. J., Toronto, (15); **P**—Patton, A. F., Toronto, (3); **S**—Senior, R. H., Toronto, (3); **T**—Tuck, J. E., Toronto, (13);

## OCTOBER

**B**—Brown, P. A., Frankford, (4); **M**—Murphy, C. E. F., Toronto, (28); **M**cauley, D. J., Toronto, (1); **R**—Robinson, W. J., Windsor, (21); **T**—Townsend, D. A., Toronto, (21); **W**—Wayman, P. F., Toronto, (1);

## NOVEMBER

**J**—Jenkinson, James, Niagara Falls, (1); **M**—McKinnon, C. L., Leaside, (13); **T**—Tinworth, W. S., Toronto, (20); **W**—White, C. M., Waubashene, (1);

## DECEMBER

**C**—Cameron, E. M., Stratford, (9); **C**rosse, C. St. C., Niagara Falls, (23); **E**—Evans, W. J., Toronto, (30); **H**—Hodges, F. J., Waubashene, (16); **L**—Little, Miss A. E., Toronto, (15); **S**—Smith, F. J., Toronto, (1); **W**—Walcott, W. D., Toronto, (1); **W**ilson, R. C., Toronto, (1);



## O.M.E.A. RESOLUTIONS

### Rural Extensions

Because food production is "one of our most important war industries," farmers, now without electricity and on existing rural lines, should be granted service where the material requirements are comparatively small.

This, in brief, was the substance of a resolution endorsed at the recent convention of the Ontario Municipal Electric Association in Toronto. The resolution in question urged that the Dominion Power Controller "provide for more flexible regulations in relation to furnishing electric energy to agriculture," while it also recommended that action be taken which would enable farmers to have electrical equipment repaired through local Hydro managers.

### Interchange of Materials

Another resolution, approved by the convention, suggested that local commissions, subject to the regulations of the Metals Controller, encourage the interchange of materials when and where shortages occur.

### Power Conservation

Following the presentation of the report of the power conservation committee, headed by P. R. Locke, of St. Thomas, the delegates endorsed the recommendation that local commissions make surveys in their own municipalities to determine where more power can be saved, and that these commissions endeavour to solve their own power problems through advertising, radio broadcasts and other means. The convention further recommended that if these efforts were unsuccessful, the chairman of the power conservation committee should be advised concerning specific violations which, in turn, could be brought to the attention of the H.E.P.C., and the Dominion Power Controller by the committee.

Incorporated in this resolution was the suggestion that the Power Controller be asked to take steps to regulate the maximum wattage per 100 square feet of store floor area.

### Switch Repairs

The suggestion that the Metals Controller establish in Ontario one or more conveniently located depots where switches could be repaired, was embodied in another recommendation made by the O.M.E.A. delegates who were of the opinion that "present conditions are creating an ever increasing and unnecessary hardship on many consumers."

### Unpaid Accounts

The convention also endorsed, in principle, resolutions contained in the report of the legislation committee and authorized the members of that committee to work in co-operation with an A.M.E.U. committee in an effort to formulate a plan for the collection of unpaid accounts of absentee consumers. At the same time, the legislation committee was authorized to place before the proper authorities the question of the proposed additional qualifications of prospective local consumers.



Editor, Hydro News: Can it be, that in our very midst we have one, "Simple Simon" by choice of name, so familiar with Mr. Webster, and yet so unfamiliar with the floral and faunal studies of the Hydro Horticultural Club? Your January issue would seem to indicate that such is the case. For his enlightenment therefore, as well as for the convenience of others, it is my pleasure to enumerate a few of our endeavours for the social welfare of Hydro employees.

This year, for example, we are planning several supper meetings, the first to be held on March 4, at 5.30 p.m., room 2, Central Y.M.C.A. Following a modest repast, Mr. Stuart Thompson, that well known writer, lecturer and field naturalist, will give an educational talk, illustrated by coloured slides, on "Our Birds And Wild Flowers." This should truly be a treat for any flower lover. Subsequent meetings of a similar or more practical nature are being planned for following months.

We are also planning this year, as a special feature, to encourage and promote the growing of vegetables. Our maxim for this year must be, "Let us garden for victory in 1943." A study of possibilities along this line is being carried out, and details will be announced later. Other plans call for the forming of a plant, tuber and bulb exchange; the starting of a club library—we already have a number of catalogues—books will come later; and last but not least, floral and vegetable displays, with emphasis on the latter.

I ask you, Mr. Editor, to be the judge. Is not this a programme worthy of support by our critic, "Mr. S. Simon?" Does he know, incidentally, that for the small annual sum of 25 cents he may become a member of this club, and so enjoy its many and varied dividends? We feel that our speaker of March 4 should be of special interest and so, through you, we extend an invitation to every Hydro club member to join us at this meeting.—W. H. Carr, Horticultural Club President.

## FORMER HYDRO LINEMAN IS KILLED IN ACTION

Flight Sergeant Observer John Wilson, a lineman with the H.E.P.C. for four years prior to his enlistment in May, 1941, was killed in action while serving overseas with the R.C.A.F.

His parents, Mr. and Mrs. C. N. Wilson received a letter and a telegram on the same day. The former was from their son telling of his exploits over Essen, while the latter reported his death.

Flt. Sgt. Wilson, 27, was a graduate of Oakwood Collegiate and the Normal School, Toronto. He had graduated at Jarvis as an observer and was promoted to a flight sergeant overseas in December, 1942, after a number of successful raids over enemy territory. He married the former Mildred Holloway of Waterloo, Quebec, on his final leave before embarking for overseas.

## DO YOU KNOW?

Three War Savings Certificates and three stamps will purchase battle dress for a Canadian soldier.

Twenty War Savings Stamps will buy a pair of boots for a soldier and a ball-bearing for a Valentine tank.

Aerial photographs make accurate bombing possible. One 25-cent War Savings Stamp will buy the film for one photograph.

"MAKES SUMMER'S WELCOME THrice MORE WISH'D, MORE RARE"—

Shakespeare.



**S**UPPLEMENTING an article in the January issue of Hydro News, concerning the violent snow and sleet storm that crippled utility services in the St. Lawrence region, the photographs at the left illustrate further aspects of the damage.

1. While this sprawling structure may resemble a game of "pick up sticks", it actually shows a pole on the 44,000-volt Maxville line after it was unceremoniously hurled to the road.

2. Snapped off by the fury of the storm, the headworks of this pole at Martintown hang limply on the circuit wires.

3. Among the survivors! This hardy transformer bank at Maxville, its supporting structure fringed with ice, withstood the onslaught of the wintry gale.

4. No, that isn't an airplane you see there. It's another pole top at Martintown that decided to "take off" but landed in the trees.

5. The rule indicates the ice thickness on a section of No. 6 weather-proof wire near Cornwall.

## CONVENTION HIGHLIGHTS

(Continued from page 9)

Stone and Webster Service Corporation, New York, when addressing the A.M.E.U. delegates. While blackouts had been complete, all night, every night and every place, Mr. DeBard stated that full inside illumination had been encouraged. Electric distribution systems, he said, were sectionalized with a number of connections to main source. All isolated generating plants in the area were required to be interconnected to the central station system in order to furnish current for hospitals and other emergencies. The speaker stated that the system of utility interconnections, so widely used in this country and the United States, had proved of great value in maintaining service during the war in Britain. He also pointed out that to assure a minimum delay in production through bomb damage, most electric utilities and industries kept a supply of essential parts for machines stored in bomb-proof shelters.

"The Why and How of Conservation and Substitution" formed the subject of the address delivered by A. A. Moline of the Canadian Westinghouse Com-

## WOODSTOCK COMMISSIONER RETIRES

To have been a member of the Woodstock Public Utilities Commission for 18 consecutive years is the noteworthy record of **Robert L. Murray** who retired from office recently. During his long and active term as commissioner, Mr. Murray's intimate knowledge of the electric and waterworks departments made him a valuable member of the utilities body.

Mr. Murray has been absent from only two commission meetings throughout his 18 years on the board, and as he attended his final meeting recently he was presented with a handsomely designed easy chair in appreciation of his services. On behalf of the commission and the city of Woodstock, J. R. Sullivan, commission manager, paid tribute to Mr. Murray for his keen interest and untiring efforts on behalf of Hydro and other utility enterprises.

pany, who also spoke before the A.M.E.U. convention. Mr. Moline expressed the belief that too much could not be said about this important subject.



## Demand For Primary Power Shows Continued Increase

Primary power demand for all systems during December, 1942, exceeded that of the previous month by approximately 54,000 horsepower, according to the latest monthly load statistics. This is a seasonal load increase and represents an advance of 3.3 per cent above the primary load demand for December, 1941. Compulsory and voluntary conservation measures have influenced load demands since September 20, 1942. According to present indications, continued co-operation of local utilities and domestic consumers will enable the Commission to fulfil its wartime power supply obligations for the balance of the winter months without additional restrictions.

Based on the maximum 20-minute peak horsepower load for the respective months, the summary sets forth load conditions on all four H.E.P.C. systems and the Northern Ontario Properties. The Niagara system, heaviest user of industrial power, experienced a primary load increase of 4 per cent, or 66,221 horsepower, over December, 1941. The total peak demand for primary load in December, 1942, was 2,275,183 horsepower, as against 2,202,612 horsepower for December of the previous year.

Combined primary and secondary load demands for the four systems and the Northern Ontario Properties also showed increases. The December, 1942, peak demand of 2,383,923 horsepower was 3.7 per cent higher than that of December, 1941.

### PRIMARY AND SECONDARY LOADS

	Maximum 20-Min. Peak H.P.		Per Cent Increase
	Dec., 1942	Dec., 1941	
Niagara System .....	1,762,869	1,665,282	5.9
Eastern Ontario System ..	183,039	181,961	.6
Georgian Bay System .....	47,288	50,582	- 6.5
Thunder Bay System .....	120,643	134,531	-10.3
Northern Ontario Properties	270,084	266,129	1.5
	<u>2,383,923</u>	<u>2,298,485</u>	<u>3.7</u>

### O.M.E.A. MEMBERS ATTENTION PLEASE!

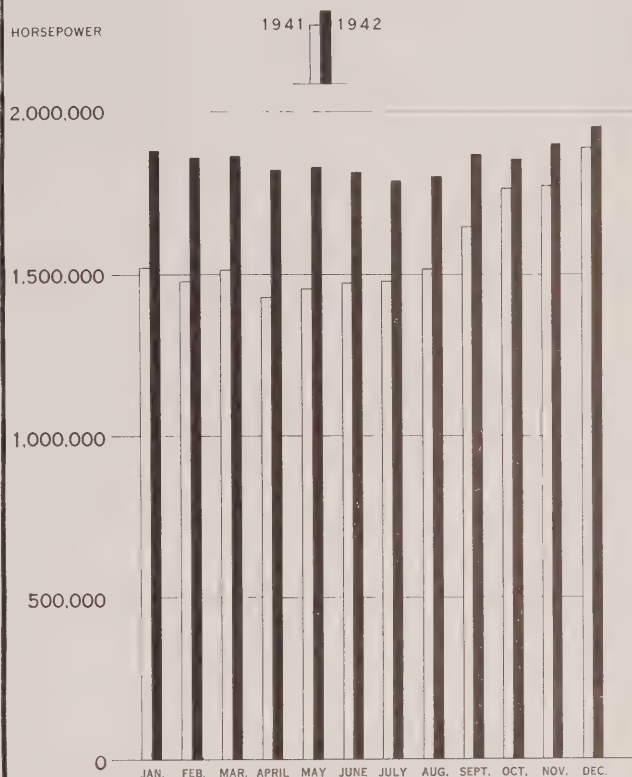
**T**HIS year the Ontario Municipal Electric Association is going all out to boost the membership over the 200 mark.

This fact was emphasized in the secretary's and executive's report submitted at the recent annual convention. All members, it was emphasized, can assist in achieving this objective by mailing the 1943 fees as soon as possible to Miss Kathleen Ciceri, the active secretary-treasurer of the association, at Guelph.

The number of 1942 members, it was reported, was 185, representing an increase of 8 over 1941. Actually, however, 19 new commissions joined. Eleven of the 1941 members did not pay their fees for 1942.

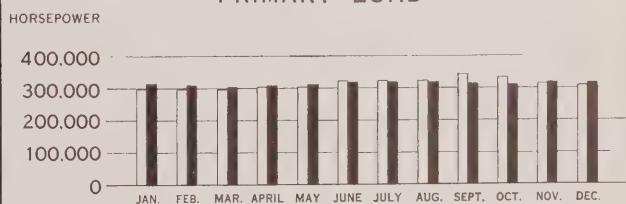
### SOUTHERN ONTARIO SYSTEMS NIAGARA — GEORGIAN BAY — EASTERN ONTARIO

#### PRIMARY LOAD



### NORTHERN ONTARIO PROPERTIES AND THUNDER BAY SYSTEM

#### PRIMARY LOAD



#### PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	DEC. 1942	DEC. 1941	
NIAGARA SYSTEM .....	1,727,212	1,660,991	+ 4.0
GEORGIAN BAY SYSTEM .....	47,288	50,582	- 6.5
EASTERN ONTARIO SYSTEM .....	183,039	181,961	+ 0.6
THUNDER BAY SYSTEM .....	108,552	108,633	- 0.1
NORTHERN ONTARIO PROPERTIES	<u>209,092</u>	<u>200,445</u>	+ 4.3
TOTAL .....	<u>2,275,183</u>	<u>2,202,612</u>	+ 3.3

# MUNICIPAL LOADS, DECEMBER, 1942

## NIAGARA SYSTEM

(25-Cycle)

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Acton	1,506	1,903	Etobicoke Twp.	7,799	V.A.	Petrolia	1,008	2,768
Agincourt	209	P.V.	Exeter	640	1,654	Plattsville	129	P.V.
Ailsa Craig	119	487	Fergus	1,286	2,759	Point Edward	1,679	1,199
Alvinston	99	649	Fonthill	183	860	Port Colborne	2,426	6,928
Amherstburg	814	2,704	Forest	495	1,562	Port Credit	889	1,934
Ancaster Twp.	390	V.A.	Forest Hill	7,164	12,172	Port Dalhousie	973	1,599
Arkona	52	403	Galt	11,377	15,126	Port Dover	408	1,790
Aurora	1,266	2,821	Georgetown	1,482	2,452	Port Rowan	97	700
Aylmer	881	1,985	Glencoe	182	763	Port Stanley	307	824
Ayr	193	760	Goderich	1,560	4,674	Preston	4,149	6,656
Baden	471	P.V.	Granton	57	P.V.	Princeton	133	P.V.
Beachville	718	P.V.	Grimsby	774	1,988	Queenston	111	P.V.
Beamsville	396	1,227	Guelph	11,262	23,074	Richmond Hill	448	1,295
Belle River	192	836	Hagersville	1,045	1,524	Ridgetown	569	1,986
Blenheim	513	1,873	Harriston	406	1,292	Riverside	1,186	5,235
Blyth	115	662	Harrow	456	1,092	Rockwood	111	P.V.
Bolton	208	629	Hensall	182	686	Rodney	144	758
Bothwell	121	683	Hespeler	2,788	2,938	St. Clair Beach	67	138
Brampton	2,419	5,975	Highgate	89	322	St. George	140	P.V.
Brantford	21,491	31,622	Humberstone	591	2,831	St. Jacobs	289	P.V.
Brantford Twp.	1,071	V.A.	Ingersoll	3,182	5,757	St. Marys	1,373	4,009
Bridgeport	151	P.V.	Jarvis	200	513	St. Thomas	7,612	17,045
Brigden	69	P.V.	Kingsville	591	2,453	Sarnia	10,566	18,599
Brussels	148	784	Kitchener	25,906	35,456	Scarborough Twp.	4,778	V.A.
Burford	191	P.V.	Lambeth	130	P.V.	Seaforth	743	1,782
Burgessville	37	P.V.	LaSalle	207	907	Simcoe	2,387	6,340
Burlington	1,649	3,925	Leamington	1,579	6,048	Smithville	185	P.V.
Burlington Beach	443	1,474	Listowel	1,385	2,984	Springfield	60	382
Caledonia	359	1,430	London	38,397	77,105	Stamford Twp.	2,800	8,275
Campbellville	38	P.V.	London Twp.	598	V.A.	Stoney Creek	245	933
Cayuga	124	700	Long Branch	1,333	4,258	Stouffville	279	1,198
Chatham	6,263	17,184	Lucan	170	643	Stratford	6,783	17,163
Chippawa	334	1,228	Lynden	105	P.V.	Strathroy	1,408	2,834
Clifford	103	491	Markham	320	1,175	Streetsville	239	701
Clinton	590	1,879	Merlin	101	P.V.	Sutton	163	949
Comber	155	P.V.	Merriton	9,543	2,916	Swansea	3,212	6,907
Cottam	78	P.V.	Milton	1,370	1,915	Tavistock	627	1,080
Courtright	45	355	Milverton	365	994	Tecumseh	349	2,331
Dashwood	97	P.V.	Mimico	2,540	7,987	Thamesford	173	P.V.
Delaware	66	P.V.	Mitchell	671	1,670	Thamesville	207	816
Delhi	630	2,430	Moorefield	40	P.V.	Thedford	102	598
Dorchester	111	P.V.	Mount Brydges	90	P.V.	Thorndale	64	P.V.
Drayton	122	528	Newbury	31	288	Thorold	2,465	5,284
Dresden	415	1,525	New Hamburg	546	1,441	Tilbury	1,357	1,923
Drumbo	79	P.V.	Newmarket	1,528	3,800	Tillsonburg	1,245	4,602
Dublin	49	P.V.	New Toronto	11,494	9,469	Toronto	356,427	657,612
Dundas	3,074	5,245	Niagara Falls	10,275	20,371	Toronto Twp.	2,802	V.A.
Dunnville	1,265	3,916	Niagara-on-the-Lake	700	1,764	Wallaceburg	3,793	4,802
Dutton	258	830	North York Twp.	10,585	V.A.	Wardsville	37	221
East York Twp.	8,379	41,578	Norwich	406	1,301	Waterdown	221	867
Elmira	1,045	2,069	Oil Springs	189	541	Waterford	486	1,294
Elora	434	1,185	Otterville	102	P.V.	Waterloo	5,447	8,968
Embro	141	420	Palmerston	605	1,400	Watford	337	1,023
Erieau	88	281	Paris	1,915	4,604	Welland	12,206	14,899
Erie Beach	7	21	Parkhill	166	1,029	Wellesley	113	P.V.
Essex	513	1,886				West Lorne	206	768
						Weston	4,835	6,165

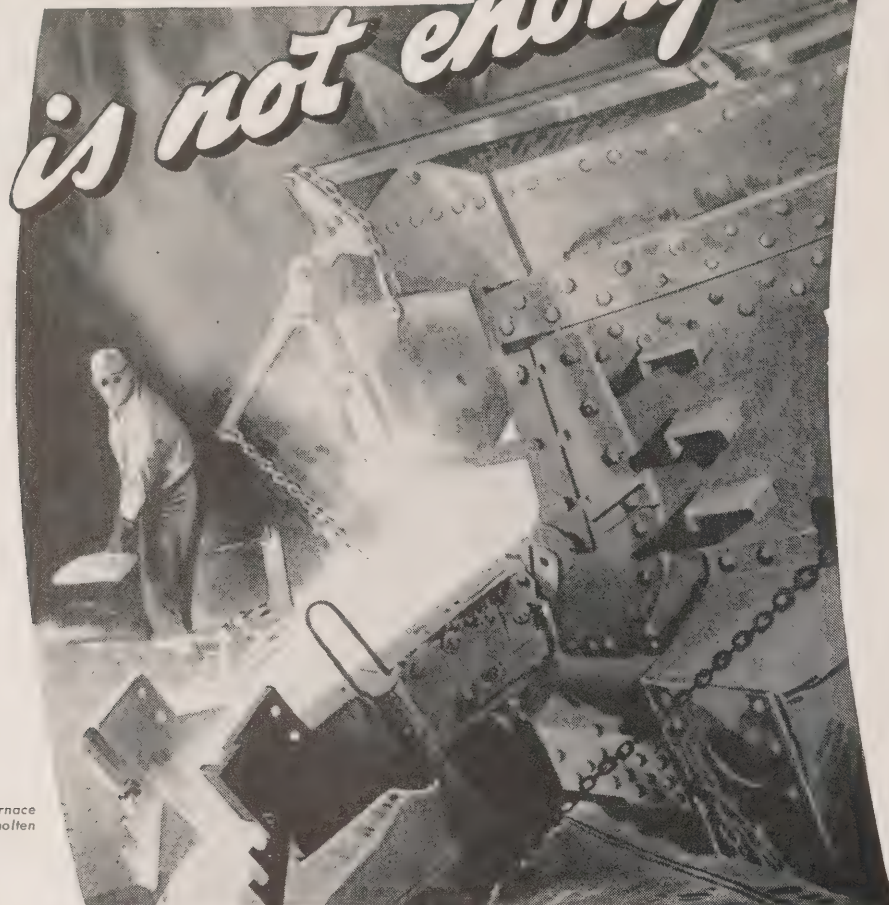


## MUNICIPAL LOADS, DECEMBER, 1942

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Wheatley -----	189	761	Paisley -----	102	730	Lakefield -----	327	1,301
Windsor -----	51,526	104,415	Penetanguishene --	1,060	4,177	Lanark -----	83	686
Woodbridge -----	640	946	Port Carling -----	118	520	Lancaster -----	54	570
Woodstock -----	8,670	12,339	Port Elgin -----	447	1,415	Lindsay -----	3,859	8,345
Wyoming -----	69	538	Port McNicoll -----	93	950	Madoc -----	185	1,130
York Twp. -----	21,328	77,175	Port Perry -----	253	1,175	Marmora -----	136	1,004
Zurich -----	115	P.V.	Priceville -----	10	P.V.	Martintown -----	30	P.V.
(25 and 66-2/3 Cycle)			Ripley -----	112	420	Maxville -----	96	811
Hamilton -----	158,149	164,719	Rosseau -----	23	305	Millbrook -----	79	749
St. Catharines -----	29,072	32,559	Shelburne -----	243	1,053	Morrisburg -----	212	1,484
Trafalgar Twp. -----	516	V.A.	Southampton -----	552	1,467	Napanee -----	1,174	3,241
(66-2/3 Cycle)			Stayner -----	260	1,106	Newcastle -----	212	701
Bronte -----	167	P.V.	Sunderland -----	70	P.V.	Norwood -----	139	710
Oakville -----	1,129	3,869	Tara -----	97	510	Omeme -----	155	630
GEORGIAN BAY SYSTEM			Teeswater -----	127	873	Orono -----	91	P.V.
(60-Cycle)			Thornton -----	23	P.V.	Oshawa -----	16,789	26,610
Alliston -----	404	1,700	Tottenham -----	94	532	Ottawa -----	35,310	150,861
Arthur -----	146	1,089	Uxbridge -----	277	1,480	Perth -----	1,590	4,197
Bala -----	87	355	Victoria Harbour --	63	979	Peterborough -----	11,553	24,977
Barrie -----	4,079	9,559	Walkerton -----	871	2,534	Pictou -----	1,100	3,400
Beaverton -----	194	941	Waubashene -----	79	P.V.	Port Hope -----	2,376	4,997
Beeton -----	133	617	Warton -----	251	1,750	Prescott -----	1,228	3,283
Bradford -----	187	1,041	Windermere -----	19	117	Richmond -----	69	428
Brechin -----	36	P.V.	Wingham -----	564	2,149	Russell -----	62	P.V.
Cannington -----	168	761	Woodville -----	77	439	Smiths Falls -----	2,529	7,741
Chatsworth -----	79	333	EASTERN ONTARIO SYSTEM			Stirling -----	287	947
Chesley -----	504	1,812	(60-Cycle)			Trenton -----	4,581	8,183
Coldwater -----	126	545	Alexandria -----	212	1,976	Tweed -----	205	1,181
Collingwood -----	2,560	6,249	Apple Hill -----	42	P.V.	Warkworth -----	65	P.V.
Cookstown -----	87	P.V.	Arnprior -----	1,193	4,019	Wellington -----	197	948
Creemore -----	141	661	Athens -----	97	626	Westport -----	92	725
Dundalk -----	251	686	Bath -----	37	325	Whitby -----	1,402	4,236
Durham -----	347	1,874	Belleville -----	6,637	15,498	Williamsburg -----	95	P.V.
Elmvale -----	173	P.V.	Bloomfield -----	97	636	Winchester -----	251	1,017
Elmwood -----	56	P.V.	Bowmanville -----	2,721	3,850	THUNDER BAY SYSTEM		
Flesherton -----	51	452	Brighton -----	385	1,462	(60-Cycle)		
Grand Valley -----	116	645	Brockville -----	4,164	10,576	Fort William -----	17,402	30,370
Gravenhurst -----	1,138	2,261	Cardinal -----	226	1,602	Nipigon Twp. -----	231	V.A.
Hanover -----	1,420	3,190	Carleton Place -----	1,681	4,143	Port Arthur -----	22,425	24,217
Holstein -----	16	P.V.	Chesterville -----	292	1,094	NORTHERN ONTARIO		
Huntsville -----	1,186	2,943	Cobden -----	90	643	PROPERTIES		
Kincardine -----	670	2,483	Cobourg -----	2,233	5,907	Nipissing District		
Kirkfield -----	24	P.V.	Colborne -----	198	960	(60-Cycle)		
Lucknow -----	338	856	Deseronto -----	162	1,002	North Bay -----	4,442	16,013
Markdale -----	183	776	Finch -----	87	396	Patricia District		
Meaford -----	679	2,759	Frankford -----	142	1,095	(60-Cycle)		
Midland -----	4,074	6,764	Hastings -----	98	823	Sioux Lookout -----	326	1,967
Mildmay -----	126	764	Havelock -----	144	1,103	Sudbury District		
Mount Forest -----	468	1,936	Iroquois -----	225	1,123	(60-Cycle)		
Neustadt -----	45	431	Kemptville -----	332	1,230	Capreol -----	228	1,660
Orangeville -----	722	2,558	Kingston -----	13,221	29,545	Sudbury -----	9,750	32,731
Owen Sound -----	5,329	13,559						

**E**VEN THE 1,000,000 HYDRO-ELECTRIC HORSEPOWER NOW USED IN ONTARIO'S WAR TIME PRODUCTION — —

*is not enough!*



Electric Furnace  
pouring molten  
steel

## **This is a war of Steel . . . and of Electricity!**

Ontario's wartime plants now use over 1,000,000 hydro-electric horsepower. And still more hydro power must be harnessed to steel to produce guns, gun carriages, tanks, corvettes, cargo vessels, etc. Over half of Canada's wartime weapons are "made in Ontario". Your Ontario Hydro System must and will supply the electric energy to produce them.

*Now, you can see why we must all save "Hydro" current in every way. Such savings will help to win our Battle for Freedom.*

Everyone can help—in homes, offices, shops, factories and public buildings. Not a single unit of electricity, for light, heat or power should be wasted.

Remember, too, that wartime production must be paid for. Save all the money you can and buy more and more War Savings Certificates.

### **SAVE HYDRO IN THE HOME**

Turn off all electric lights when not in use. Switch off your range elements promptly as soon as food is cooked. Have your electrical dealer or local Hydro Shop keep your appliances in first-class order.



**THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO**



HYDRO

# Nets



"BIG SHOT"

*Out of the  
**FRYING PAN**  
and into the  
**FIRING LINE***



# Save ALL WASTE fats & bones

Canada needs and **must have** every spoonful of fat drippings, every piece of scrap fat and every bone from **every** kitchen in Canada.

Fats make glycerine and glycerine makes high explosives. Bones produce fat. Also glue for war industry.

Don't throw away a single drop of used fat—bacon grease, meat drippings, frying fats—every kind you use. They are urgently needed to win this war.

Strain all drippings through an ordinary strainer into a clean wide-mouthed can. Save your scrap fat (cooked or uncooked) and all types of bones—cooked, uncooked or dry.

When you have collected a pound or more of fat dripping, **take it to your meat dealer** who will pay you the established price for the dripping and the scrap fat. **Or you can dispose of them through any Municipal or Salvage Committee collection system IN EFFECT in your community.**

**Be a munition maker right in your own kitchen.** For instance, there is enough explosive power hidden in ten pounds of fat to fire 49 anti-aircraft shells. So—every day, this easy way, keep working for Victory for the duration of the war.

**DEPARTMENT OF NATIONAL WAR SERVICES**  
**NATIONAL SALVAGE DIVISION**



# HYDRO News

*formerly The BULLETIN*

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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## The Front Cover



This month's front cover picture, entitled "Big Shot," was taken in "Genalco," one of the British Empire's largest ordnance plants which is located at Peterborough, Ontario, where half the Hydro power used is direct war load. It shows the assembly of a 3.7-inch anti-aircraft gun whose mount alone weighs 7½ tons and comprises approximately 1,200 separate parts.

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March 1943

Number 3

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Framed between the rock in the distant background of this arresting illustration are the headworks of the new Barrett Chute development. This is a section of the canal which has been cut through the rock.





## \* *Page Three* \*

### JOHN B. KELLY

**I**N this issue, Hydro News pays tribute to John B. Kelly, who has been manager of the Goderich Public Utilities Commission since 1897. Mr. Kelly is remarkable in many respects. He witnessed the inception of Hydro and, among other achievements, may have been the builder of the first automobile which he drove in the summer of 1884!

Mr. Kelly has had a colourful and interesting career. O.M.E.A. and A.M.E.U. delegates who were present at the joint convention banquet in Toronto on February 9 will recall that he celebrated his 84th birthday on that day.

### "COSTLY MISTAKES"

**B**Y failing to implement the long-heralded St. Lawrence agreement, we repeated the mistake we made when we stopped work on the Florida ship canal from Port Inglis to Jacksonville a few years ago.

This, in brief, is the opinion of Ernest K. Lindley whose recent article in the Buffalo Courier-Express directs attention to both projects. He recalls that work on the Florida ship canal had been started under the direction of an army engineer, now Lieut.-Gen. Somervell, chief of the U.S. Army Services of Supply, and then brought to a stop through the efforts of the "economy bloc." Had the canal been available now, Mr. Lindley points out, it could have taken open water craft, cutting off many miles on the run to the Middle Atlantic and New England seaboard — miles which became extremely costly when the U-boats struck in the early months of 1942. This writer characterized the failure to proceed with both the Florida ship canal and the St. Lawrence as "costly mistakes," and says that it was "profligate waste" not to have proceeded when there was a surplus of men, materials and machines. Mr. Lindley concludes with this observation: "In the final reckoning, the economy bloc may prove to have cost the nation many hundreds or thousands of times what it thought it was 'saving'."

The opinions expressed by Mr. Lindley speak for themselves. So far as Canada is concerned, the power shortage which became manifest in Ontario last year and resulted in the introduction of restrictions and a cam-

paign of voluntary conservation, has served to accentuate the important contribution the St. Lawrence project—if it had been undertaken and completed—could have made to the war production programme.

Hydro, which was committed to proceed with the St. Lawrence development as soon as the agreement was implemented, was unable to embark upon any major undertaking until that situation became clarified. When it finally became evident last year that no immediate action would be taken to go ahead with the St. Lawrence, the Commission turned to the Ottawa river. The results of the negotiations with Quebec and the important agreement reached are discussed in the article "Onward To The Ottawa" in this issue of Hydro News.

### CALL OF SPRING

**S**PRING is a magic word. It heralds the glorious awakening of Nature as she rolls back the cold, heavy blanket of winter. It is a clarion call to the great outdoors where men may re-discover all these things which contribute a new zest to daily life.

But spring is also an opportunity and a time to embark upon new achievements. To the war-weary world it brings a new hope tempered by a sense of sober optimism, reminding us that a sustained and vigorous prosecution of our war-time tasks can alone hasten Victory.

To the thousands of loyal Canadians who will be making their humble but important individual contributions to Canada's Victory Garden Campaign this year, spring comes to provide a compelling impetus to high adventure in "The Good Earth."

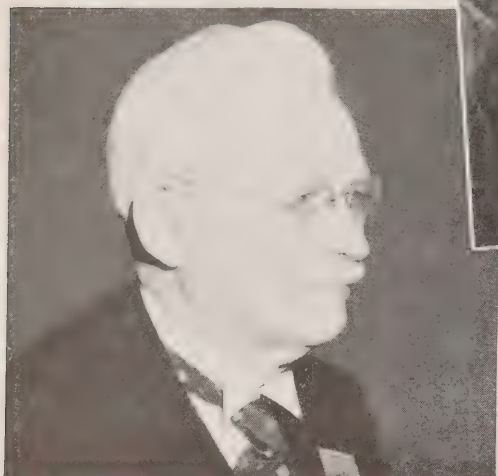
The challenge and opportunity presented by this campaign have been recognized by members of the horticultural section of the Ontario Hydro-Electric Club. In launching a drive for 800 Victory Gardeners, the club has tackled the problem in a business-like manner by setting up competent committees whose members will make available complete information on how to grow vegetables for victory—from the seed packet to the dinner table.

This is a chance for Hydro employees to render another important and patriotic service. It presents them with an opportunity to use their garden tools as weapons of war.

Let us get on with the job. Spring is here.

The last word in sartorial elegance, Mr. Kelly is pictured here as a pensive youth of twenty in 1879.

Here's John B. Kelly, manager, treasurer and acting secretary of the Goderich Public Utilities Commission, as he looks today.



This rare photograph shows Mr. Kelly with the vehicle that brought him fame as a high-wheel artist.

# THE REMARKABLE MR. KELLY

**Manager Of Goderich Public Utilities Commission Believes He Built First Automobile—Managed Father's Office At 17—Installed Blyth's First Electric Light Plant—Was Bicycle Racer, Trick Rider And Fancy Skater—Marks 84th Birthday And Predicts All Canada Will Adopt Hydro Principle**

**By Herbert L. Hickey**

**B**UILDER of the world's first automobile! That astounding claim is made by John B. Kelly, manager of the Goderich Public Utilities Commission, who divulged the information to Hydro News in these words:

"Yes, I have reason to believe that it was the first automobile that ever ran. I have had searches made into all available records, and the earliest date I can find for an automobile patent is 1886, two years after I had constructed my machine."

It is a refreshing experience to meet Mr. Kelly, who has been managing the Goderich Hydro system since 1897. He is now 84 years of age, and his keenness of mind, alertness and erect bearing are the envy of men many years his junior. And in all probability, he is the oldest active employee in Hydro circles today. It appeared only natural that one who has observed the passing scene for more than four-score years must have some interesting comments to make on his life and times, and Hydro News, therefore, prevailed upon Mr. Kelly to recount some of his experiences. He obligingly agreed—with startling results.

But first, let us turn back the pages of time to the year 1859.

John Basil Kelly was born in the village of Blyth, Huron County, Ontario, on February 9th, 1859, the son of Mr. and Mrs. Patrick Kelly. His father operated a flour

and lumber mill in the village and took a lively interest in public affairs and politics. At about the age of 17, when he had completed his schooling in Blyth (a few miles from Goderich), John Kelly went to work in his father's mill, where he was put in charge of the office. To further his education he took a correspondence course in steam engineering from a Scranton, Pa., institute and later a course in electrical engineering from Professor Easton of New York City. (Mr. Kelly recalls with amusement that the professor once gave him a problem to solve—a particularly difficult problem—and he hasn't finished it yet!)

He soon put his technical knowledge to practical use. In the year 1891 he installed the first electric light plant in Blyth, with power generated from the steam plant in the flour mill. During the years the system was in operation, Mr. Kelly states proudly, the village was never known to be without light for even one night. His aptitude for things mechanical proved very valuable in his father's business and he effected many improvements about the mill.

It was in 1883 that Mr. Kelly turned his hand to an invention that has since become one of the most useful and familiar of all inventions—the automobile. With vividness and a trace of understandable remorse, Mr. Kelly told the story of that first automobile, for although he created it and had it in operation, he did not take out a patent.



From the discouraging reception given to it, he was firmly convinced that the automobile would never see the light of day as a vehicle of general use.

#### Successful Trial Run

Mr. Kelly said that the idea occurred to him while watching a thrashing machine traction engine. If a machine could be made to run on the land, why couldn't some conveyance be made to run on the road? He turned over the thought in his mind for some little time, and then began translating an idea to an actuality. He worked on his invention in his spare time and it took about a year to complete it. It was in the Summer of 1884 that he first put it on the road for a trial run—and it went!

But let Mr. Kelly continue the story in his own words:

"I had it running part of the Summer of 1884, but dismantled it when I found out how unpopular it was. People said it would never be any good, and I felt that I had made something that would never be used, so I didn't apply for a patent.

"The car became an awful nuisance and the sight and noise of it caused a lot of trouble. Horses even jumped over fences and into ditches. At that time, of course, teams of horses filled the roads everywhere and there didn't seem to be room for anything else. It didn't seem possible that horses would ever be put off the road. But my father was a man of vision and imagination and he told me I was foolish to abandon the idea. He said, 'That is the coming vehicle of the world, and there is no reason why man cannot fly in the air!' But I said the machine was no good anyway and finally took it apart. How I wish now that I had listened to my father!

"The machine looked very much like a buggy, except that it was longer. It had four wheels and used steam and coal oil for fuel. I suppose you would call it a steam buggy. It had two seats, although nobody else would ever ride in it with me, and the steering was done with a lever. Before putting it together, I got equipment from different places. I bought a boiler in Hamilton and a second-hand engine in Fergus, where it had been used in an old elevator. I remember that the engine had been made by the Doty engine works in Toronto. The four wheels came from Galt. They were artillery wheels, with a metal hub and wooden spokes, and the tires were made of iron. You can see why the machine didn't need a horn.

#### Auto Had Chain Drive

"I had the boiler at the back, under the seat, and the engine at the front. The car ran on a chain-drive principle. There was a chain-drive to a countershaft, and then from the countershaft to a sprocket on each of the two rear wheels. In later years Barney Oldfield, the famous automobile speed driver, used the chain-drive principle on his racing cars.

"The car ran all right, but it wasn't safe to take it on the road. I drove it mostly around my father's mill in the village. I didn't have it patented and in those days we didn't bother much about taking pictures. The only person in recent years who would have remembered it was a barber in Blyth who died about two years ago.

"After I took the car apart, I put the boiler and the engine in the elevator at the mill and turned the body of it into a horse rig for delivering flour and feed around the



This happy family group was photographed in 1933, on the fiftieth wedding anniversary of Mr. and Mrs. John B. Kelly. Back row (left to right): Fred Craigie, son-in-law; Mrs. Joseph C. Kelly, daughter-in-law; Joseph C. Kelly, son; Harry Strickler, son-in-law; Mrs. Basil L. Kelly, daughter-in-law. Middle row: The late Mrs. Fred Craigie, daughter; the late Mrs. John B. Kelly; John B. Kelly; Miss Helen Kelly, daughter. Front row: Basil L. Kelly, son; the late Mrs. Harry Strickler, daughter; Master Gary Kelly, son of Mr. and Mrs. Basil L. Kelly.

village. I believe it was about two years later, 1886, that patents were taken out for an automobile in Paris and in Rome. If I had followed my father's advice and manufactured my machine, I'd be telling a different story today!"

When his father died in 1894, Mr. Kelly sold the mill and moved the power plant to another location. He later sold the power plant to a manufacturer. One morning in 1897, he was called out of bed quite early by Dr. Reginald Shannon and Senator Proudfoot of Goderich, who asked him to come to Goderich to take charge of the town's electric lighting plant. He accepted the position and the following year the waterworks department was added to his responsibilities. He has managed the operation of these two utilities ever since and, to judge by appearances, is "still going strong."

Mr. Kelly's life has been filled with action and accomplishment and in his younger days he was a prominent athlete. Among the sports in which he took part were bicycle racing, ice skating, baseball and cricket. As a bicycle racer and trick rider on the high-wheel, Mr. Kelly was a familiar figure at cycling events in Clinton, Lucknow, Kincardine, Blyth and surrounding districts. He won a great many prizes for his skill on the bicycle, and hanging in his office today at the Goderich Public Utilities

(Continued on page 22)



## "HURON'S GOLDEN GATE" IS BUSY ONTARIO CENTRE

**Present And Former Mayors Serve On Goderich  
Public Utilities Commission**

Located on the east shore of lake Huron, with a population of close to 5,000, Goderich is one of the busiest and most attractive centres in Western Ontario. Beauty of location is happily combined with commercial and industrial opportunity, and it possesses one of the finest harbours on the Great Lakes, with accommodation for ships of every size.

Widely known as "Huron's Golden Gate", the town is noted particularly for its huge grain elevator system and its great salt-beds. Millions of bushels of grain come to Goderich every year from the Head of the Lakes, awaiting storage and trans-shipment by rail and water to many parts of the world. The largest power consumer is the Goderich Elevator and Transit Company plant, which has space for two million bushels of grain. It uses approximately 700 horsepower, 350 from Hydro and another 350, which is steam generated, and used only for unloading of grain boats.

### **A Clearing House For Grain**

The salt formation at Goderich is estimated to be about 800 feet in thickness and is considered the purest in the world, being 99 per cent pure salt. One of the town's leading industries, the Goderich Salt Company employs 100 persons, and its Hydro load of 125 horsepower is supplemented by steam-generated supply.

In a manufacturing sense, there is one major war industry in Goderich. This is the Dominion Road Machinery Company, which is engaged on a special contract for the Dominion Government. But broadly speaking, the whole town is very definitely engaged on "war work." It is a mammoth clearing house for precious grain to feed the people of the United Nations, and its industries are producing a variety of commodities and machinery to serve vital needs. The Western Canada Flour Mills, with an output of 2,500 barrels a day, is an outstanding example. Then, too, there are the Goderich Organ and Woodwork Company, the National Shipbuilding Company, the Huron Canning and Evaporating plant, the Goderich Knitting Company, the Goderich Lumber Company, and other firms producing clothing and manufactured goods. Of the town's total power load, exceeding 1,500 horsepower, about half goes directly into industry.

The two great Canadian railways, C.N.R. and C.P.R., are well established in Goderich, and rail traffic unites with lake shipping to provide a convenient, rapid transportation network.

Within a short distance of Goderich are two airports, at Sky Harbour (R.C.A.F.) and at Port Albert (R.A.F.), where several hundred boys are undergoing rigorous training before taking their places in the Allied air fleets.

Another unique feature of Goderich is its geometric design. The town is laid out on a "hub" principle. In the centre stands the County Court House surrounded by a beautiful park of shade trees and with a broad roadway on the outside. On the outer rim of the hub is the business section, with its offices, shops and hotels. From this focal point streets radiate in every direction, leading to the resi-



The building of the Goderich Public Utilities Commission and members of the commission are shown above. On the left is Charles C. Lee with Dr. W. F. Gallow, chairman, in the centre, and mayor E. Douglas Brown on the right.

dential sections, churches, schools and parks. The streets of Goderich are among the widest to be found anywhere in Ontario, and they are freely adorned with picturesque rows of fine trees.

The office of the Public Utilities Commission is located in the heart of the business section, facing the Court House.

The members of the Goderich commission at the present time are Dr. W. F. Gallow, chairman; Charles C. Lee and mayor E. Douglas Brown, commissioners; and J. B. Kelly, manager, treasurer and acting secretary. It is a coincidence that both Dr. Gallow and Mr. Lee are former mayors. Dr. Gallow, one of the town's leading professional men, has always taken an active part in municipal affairs. Mr. Lee is the owner of the Sunset Hotel, famous Goderich summer resort situated on the high banks overlooking lake Huron, and for many years he has operated a hardware, plumbing and steamfitting business. Mayor Brown, in addition to his many civic duties, acts as chemist at the Western Canada Flour Mills. Mr. Kelly, who serves full time at the commission's office, is the subject of a separate article appearing elsewhere in this issue. Reeve of Goderich at present is Robert E. Turner.

The affairs of the Public Utilities Commission, embracing both Hydro and waterworks, are ably administered by these four officials and a staff of eight employees: "Ed" Nelson, superintendent; Fred Bridle and Harold Murney, who do line work, meter reading and incidental work pertaining to both utilities; Glenwood Nelson, Reg. Bridle and William Proctor, operators of the powerhouse; and Misses B. Watson and Helen McCarthy, who take care of office responsibilities.

"Huron's Golden Gate" is proud of its civic progress!



# *GALT Pays Off and Celebrates!*



This scene was witnessed at the recent gala banquet in the Iroquois Hotel, Galt. Seated at the head table, from left to right, are A. W. Mercer, J. A. Webster and George Fisher, former commissioners; Lou's Blake Duff of Welland, guest speaker; commissioner George Hancock; Walter McCormick, chairman of the Galt Public Utilities Commission, who acted as toastmaster; Mayor R. K. Serviss; commissioner Harvey O. Hawke; R. T. Jeffery, chief municipal engineer, H.E.P.C.; former commissioner W. A. Dixon; ex-mayor W. S. McKay; and former commissioner E. B. Fewings, now of Toronto.

## **MAKES FINAL PAYMENT ON OUTSTANDING DEBENTURES — CITY NOW OWNS ITS HYDRO SYSTEM — OCCASION MARKED BY BANQUET**

**A**NOTHER important chapter was chronicled in the history of Galt this month when it made the final payment on outstanding debentures of its municipal Hydro system.

Since the establishment of the original plant back in 1910, more than \$500,000 has been paid off and the city now owns a million-dollar Hydro enterprise. The system's annual revenue has reached \$350,000, while the average monthly power load is in the neighbourhood of 12,000 horsepower. Today the Galt Hydro system serves 4,780 consumers, with 62 per cent. of its total load supplied to war industries.

One of Ontario's most flourishing centres, Galt is a city of fine buildings, schools and churches; four thousand homes and 115 diversified industries; a well-planned chain of parks and playgrounds; attractive streets and bridges. Here, too, you are shown the largest aircraft school and the largest armour-plate processing plant in the Dominion.

On every hand in evidence of the progressive spirit of 15,000 industrious citizens who, with justifiable pride, regard Galt as second to none as an example of community achievement and civic beauty—a city whose whole strength is today thrown forcefully behind Canada's war effort.

In addition to its now famous Aircraft Training School, where 1,200 boys receive practical instruction in airplane

mechanics for later use in the R.C.A.F., Galt is also the home of a naval school for engine room artificers and a women's naval establishment. The aircraft school is divided into four units, located in various parts of the city, and requires 125 horsepower for the operation of its machinery, exclusive of lighting.

With speed and thoroughness, Galt has geared itself for the demands of war, and its reputation has been greatly enhanced by its noteworthy production effort. In its early days the settlement was known as Shade's Mills, having been founded by Absalom Shade, a pioneer of what is now mid-western Ontario. In 1827, officials of The Canada Company came to the district and purchased a huge tract of land extending from Hamilton westerly to Lake Huron. The Commissioner of the Company was John Galt, a noted Scottish author, and his name was perpetuated when, in the same year, Shade's Mills was christened "Galt" in honour of his part in opening up and developing the area.

On a visit to Galt earlier this month, Hydro News found a veritable gold mine of information in H. R. Hatcher, active manager of the Public Utilities Commission. Mr. Hatcher, who was busily engaged in making last-minute arrangements for the banquet to celebrate the Galt system's debt-free status, took time out to present a panorama of the city and its many achievements. Marshalling





Located on the main floor of the administration building, this is the Galt Hydro showroom. The plaque appearing slightly to the left of the picture was erected in honour of Sir Adam Beck.

figures, curves and photographs to support his claims, Mr. Hatcher emphasized the very important part Hydro is playing in making Galt a leading centre of war-time production.

Further information was obtained from A. B. Scott, genial secretary-treasurer of the Galt Commission, who traced the Hydro utility's financial progress from the days of its inception down to the present time. Mr. Scott stated that in that period of time the Commission has paid off a grand total of \$518,001.95 in debentures.

#### Dean of the Commission

The members of the Galt Public Utilities Commission at the present time are D. W. McCormick, chairman; George Hancock, H. O. Hawke, and A. E. Willard, commissioners; R. K. Serviss, mayor; and Messrs. Scott and Hatcher, as secretary-treasurer and manager respectively.

In point of service, Mr. Hancock is the dean of the Commission, having served as a commissioner for 27 years. He has been an ardent Hydro advocate since its earliest days, and was a member of the original fire and light committee of the city council that introduced Hydro to Galt in 1910. Other members of that committee, Mr. Hancock informed *Hydro News*, were F. S. Scott, chairman; W. R. Osborne and W. H. Kennedy. (Mr. Scott, who was a prominent manufacturer in Galt and at one time a member of parliament, died recently, just a few days before the city was to celebrate the attainment of its debt-free position). In 1912, the fire and light committee became known as the Hydro-Electric Commission, and in 1919, by a vote of the ratepayers, the waterworks and Hydro departments of the city were combined to form the Public Utilities Commission.

Galt has been fortunate in its selection of Hydro administrators and public confidence is indicated by the fact that, in addition to Mr. Hancock's service record of 27 years, Mr. Hawke has served for 20 years, while both Mr. McCormick and Mr. Willard have served for 15 years. The Commission's present staff totals 32 employees, 22 of whom are in the Hydro section.

A very striking asset of the Galt Commission is its fine three-storey administration building, adjoining which is the city's main power station. When it was officially opened by Sir Adam Beck in 1922, it was the first all-steel office

building in the district. On the main floor are the showroom and sales division and a number of offices. In addition to the main power station, five sub-stations are located throughout the city. One of the sub-stations was formerly a school building, and commissioner Hancock stated that Sir Adam Beck attended that particular school in his boyhood.

#### Many Attend Banquet

Galt's achievement in clearing its Hydro system of debt, including charges for land, buildings and equipment, was marked by a banquet at the Iroquois Hotel on March 2. The celebration was attended by commissioners, both past and present, members of the city council and civic bodies, representatives of the O.M.E.A. and the H.E.P.C., and a number of neighbouring municipalities. Prominent speakers addressed the gathering of almost one hundred persons, with chairman McCormick acting as toastmaster. The guest speaker of the evening was Louis Blake Duff, of Welland, a former newspaperman in Galt, who delivered an entertaining address on "The Galt of Yesterday".

A toast to The Hydro-Electric Power Commission of Ontario was proposed by commissioner H. O. Hawke, who said it has been his pleasure to have worked with all chairmen of the Commission since its formation. He told of the fine co-operation Galt has received throughout the years from Commission executives and engineers, and expressed regret that Dr. T. H. Hogg and commissioner J. Albert Smith, both of whom had hoped to attend, had found themselves unable to be present because of other pressing engagements.

R. T. Jeffery, chief municipal engineer, replied to the toast to the H.E.P.C. of Ontario. "Paying off a million dollar plant is no mean achievement," said Mr. Jeffery, in tribute to the Galt Commission. "The success Galt has had has been due in no small measure to the calibre of the men who have served your community." During the course of his remarks Mr. Jeffery touched on power supply problems facing the Ontario Commission in wartime. He estimates that more than a million horsepower will become surplus power as soon as the war stops and believes all Hydro municipalities should endeavour to maintain a sound financial position in order to deal effectively with post-war problems.

#### "Million Dollar Investment"

A few reminiscences akin to Hydro in Galt were cited by A. B. Scott, secretary-treasurer of the local com-



Here are the members of the Hydro line maintenance crew at Galt. They are (from left to right): Arthur Babcock, superintendent; Norman MacDonald; Stewart Babcock; Cliff Bright; Ernie Tomlinson and Roy Babcock.



## MEN WHO SERVE GALT PUBLIC UTILITIES COMMISSION



A. B. Scott  
(Secretary)

George Hancock  
(Commissioner)

R. K. Serviss  
(Mayor)

D. W. McCormick  
(Chairman)

H. O. Hawke  
(Commissioner)

A. E. Willard  
(Commissioner)

H. R. Hatcher  
(Manager)

mission. The original plant, he said, was valued at \$16,500, while the total revenue for the first year of operation was \$36,678. At that time there were 425 consumers on the Hydro system, and the Commission had contracted for approximately 1,200 horsepower. In sharp contrast, Mr. Scott presented figures on today's operations. With its plant valued at one million dollars and annual revenue now reaching \$350,000, the Galt system serves 4,780 consumers and has an average monthly load of almost 12,000 horsepower.

Manager H. R. Hatcher spoke on "Your Million Dollar Investment—Now Paid," and listed the Galt Hydro system's assets as follows: transmission lines, \$10,000; land and buildings, \$200,000; sub-station equipment, \$145,000; distribution system \$290,000; line transformers, \$135,000; meters and devices, \$86,000; street lighting equipment, \$72,000.

Mr. Hatcher paid a sincere tribute to line superin-

tendent Arthur Babcock and his line maintenance crew, and expressed the commission's appreciation of the assistance it has received from its consumers and civic bodies. "It's our duty to see that the system is properly maintained," Mr. Hatcher declared emphatically, "and that's what we're going to do!"

F. H. Marsh, president of the Bank of Toronto, gave a brief address, recalling that he had been a resident of Galt 39 years ago. He congratulated the council and the public utilities commission on the splendid way in which the city's financial affairs have been handled.

A number of toasts were proposed and replied to by civic officials.

Seated at the head table were Mayor R. K. Serviss; Louis Blake Duff, guest speaker; D. W. McCormick, chairman of the Galt Public Utilities and toastmaster for the occasion; commissioners George Hancock and H. O. Hawke;

*(Continued on page 23)*



A view of the imposing administration building of the Galt Public Utilities Commission, adjoining which is the city's main power station. The building was officially opened by Sir Adam Beck on July 28, 1922.



The Cedar Street substation of 1,000 horsepower rating is one of five such units spotted throughout Galt.



# Hydro Employees Urged To Plant Victory Gardens As Serious Food Shortage Is Predicted This Year

Committees Set Up By Horticultural Section Of Ontario Hydro-Electric Club To Aid All Members In  
"Growing Vegetables For Victory" — Plans Are Outlined And Objective Is Set  
At 800 — Could Grow 80 Tons Of Produce For Hydro Tables

**T**HIS spring it looks as if the fancies of most Hydro men, in common with those of thousands of other Canadians, will be turning to thoughts of "The Good Earth."

Right now at least eight hundred Hydro gardeners and prospective gardeners should be thinking along these lines for that is the objective of the Victory Garden Campaign launched by the horticultural section of the Ontario Hydro-Electric Club.

By radio, through the newspapers and in addresses by representative speakers, Canadians have been warned that this year they face a serious food shortage because of insufficient farm help, military requirements and the increasingly heavy demands upon already overtaxed transportation facilities.

To help ease this problem, every individual who has a garden of his own or who can acquire a plot of ground is being asked to do his or her part in "Growing Vegetables For Victory." The vigorous Dominion-wide government backing of this campaign emphasizes the urgency of concerted action on the part of the Canadian people as a whole.

## Active Committees Named

With all the facts before them, president W. H. Carr of the horticultural section of the Ontario Hydro-Electric Club and the members of his executive recognized the important contribution Hydro employees could make to the success of this campaign. As a result, Adam Smith was appointed chairman of the Hydro campaign. He, in turn, has created several active sub-committees whose members will provide assistance and guidance to all Hydro gardeners.



The cartoonist has no doubt in his mind concerning the success of the Victory Garden Campaign. "The possibilities are almost unimaginable," he declares. "The campaign idea is the berries." To emphasize his point he dashed off the above reproduction.



There are rich rewards and a wealth of satisfaction awaiting the successful victory gardener. Determination and sustained effort can easily produce the above results.

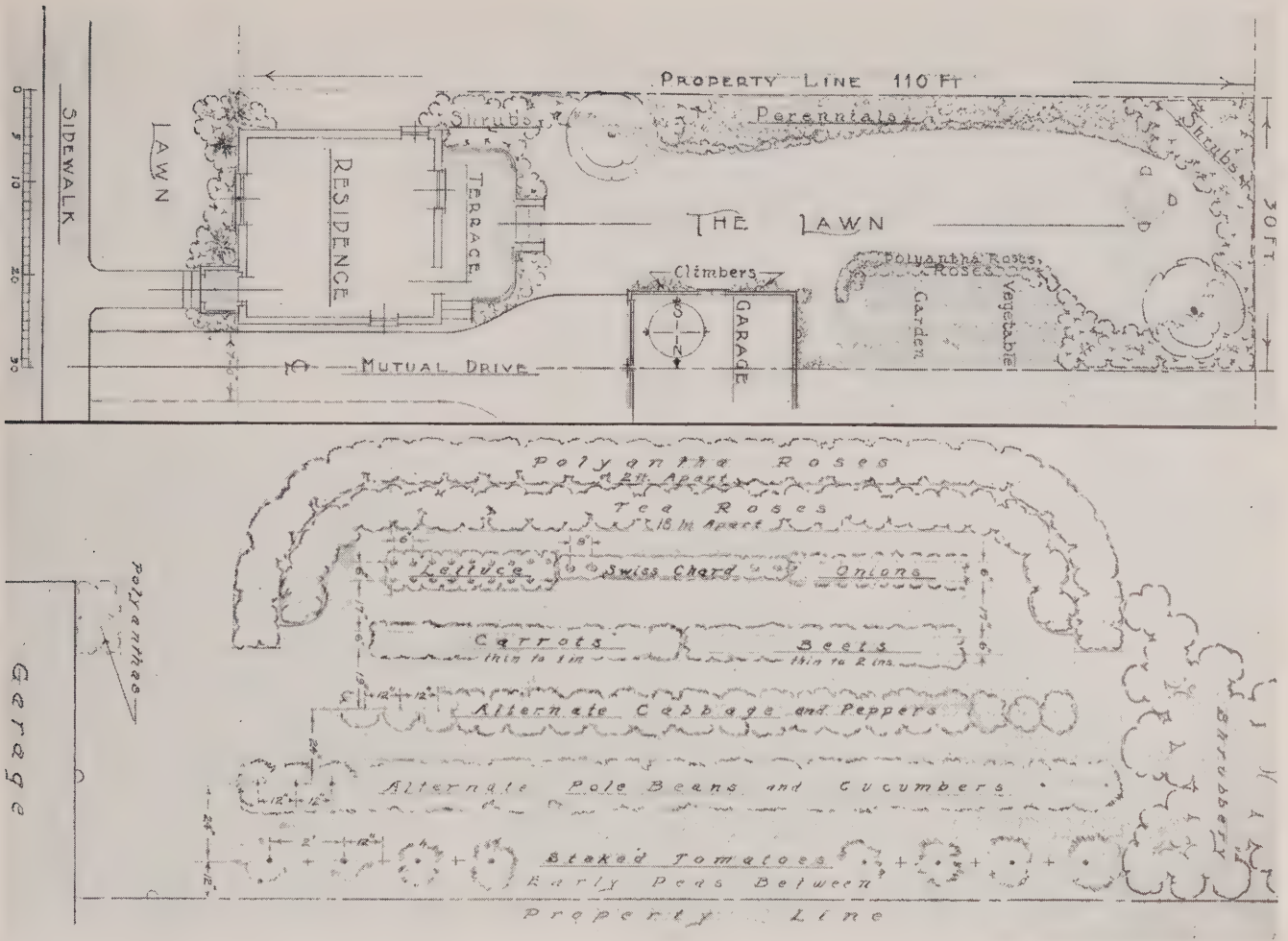
Roy Harmer has been named to head the publicity committee, and the allotment committee is under the supervision of J. F. MacLaren. The duties of the latter will be to obtain plots near the homes of Hydro employees who have no gardens of their own. What to grow, how to grow it and how to frustrate insect saboteurs are among the duties assigned to R. H. Starr and his committee on garden culture. For the benefit of the wives of Hydro employees, Miss Edithemma Muir, Hydro Home Economist, who heads the ladies' committee, is planning demonstrations on the preparation of vegetable dishes and the preserving of vegetables for the winter months. In the fall, James Traill and his committee of statisticians will report on the production results of the Hydro Victory Garden Campaign.

While it is impossible to predict just how much produce 800 Hydro vegetable gardens would produce, the experts say that an average of 200 lbs. is "a fairly conservative estimate" for each garden. On this basis, 80 tons of produce could be produced for Hydro tables.

## What Past Records Show

One garden of thirty-five feet square worked by novices in 1942 is credited with the following produce: pole beans, forty pounds; lima beans, twelve pounds; cabbage, six heads; chinese cabbage, twenty-four heads; beet greens, two pounds; beets, two pounds; broccoli, thirty-four bundles; carrots, forty-two; cauliflower, six heads; sweet corn, three dozen ears; cucumbers, three dozen; lettuce, ample for family; onions from sets, one quart; onions from seeds, thirty bunches; peas, two pecks; radishes, ample spring and fall; swiss chard, forty-four pounds; tomatoes, fifteen dozen;





Here is a suggested garden plan which may meet the requirements of the average home owner. It was prepared by A. H. Sharpe who is a member of the H.E.P.C. Victory Garden Campaign Committee. The lower reproduction is an enlargement of the section immediately behind the garage. By studying the plan carefully, the reader will see how Mr. Sharpe would lay out this mixed garden.

squash, fifty-four; parsnips, four dozen. The cost was six dollars and five cents, including ploughing, insecticides, seeds and plants. They had a good cash return, but better still, their vegetables had higher vitamin values because they came fresh from the vine and had the full flavour of produce ripened in the garden.

A garden of eight by twelve feet was grown by a member of the operating department last year. That area provided the essential crisp vegetables required for salad served to his family of two adults and three school-age children. Tomatoes, carrots, cabbage, radishes and lettuce were grown in that area, and along the garden fence the climbing sugar tomatoes gave a beautiful yield for tomato pickle and tomato marmalade.

Some indication of the scope of the campaign is to be found in the fact that guidance will be given on how to utilize all sizes and types of gardens to the best possible advantage.

The project, which has been heartily endorsed by Dr. Thomas H. Hogg, chairman and chief engineer, and his colleagues on the Commission, is already gathering momentum. All H.E.P.C. employees who intend having a garden this year, or those who would like to have one but haven't any plot, have been asked to fill out a yellow form and return it to Adam Smith, along with 25 cents to help

defray organization costs. The results of this survey will enable the various committees to swing into action. Hydro gardeners will not only be advised concerning the best kind of seed to buy and how to grow vegetables, but they will receive specially designed books on which they will record the dates of planting, the amount of seed used and other essential data which will serve as a guide in future years.

#### GUIDANCE ON VICTORY GARDENS AVAILABLE TO MUNICIPALITIES

In launching the Victory Garden Campaign for H.E.P.C. employees the members of the executive of the horticultural section of the Ontario Hydro-Electric Club are also making provision to furnish garden guidance to municipal Hydro employees. In most cases, these employees will probably be co-operating in their own local campaigns. Should advice on any specific point be desired, however, queries should be directed to the attention of Adam Smith, Victory Garden Campaign Chairman. H.E.P.C., 620 University Avenue, Toronto, and replies will be mailed as quickly as possible.

**D**ISCOVERED by Champlain in 1613 and originally known as the "Grand River of the Algonquins", the Ottawa river, a famous and historic Canadian water highway over which the early voyageurs paddled their fur-laden birch bark canoes, has been front page news in recent months.

This news has focused attention upon an agreement which will enable Ontario and Quebec to share almost equally in the development of important new power resources aggregating 850,000 continuous horsepower at seven sites along the international section of the river.

Ratified by the Ontario Legislature and now awaiting ratification by Quebec and the Dominion Government, this agreement is the sequel to negotiations conducted by the two provinces, The Hydro-Electric Power Commission of Ontario and the Quebec Streams Commission.

In addition to allocating these sites as undivided units to be developed as and when required by each province, it will make available to both provinces the most desired sites in each case. Thus, the sites most desired, and secured, by Ontario are those least desired by Quebec.

#### Paves the Way For Planning

To the Hydro-Electric Power Commission of Ontario, which has been called upon to meet unprecedented demands for power as a result of the war, the agreement is one of major significance. It will, in brief, pave the way for the planning and undertaking of new developments as required.

In a statement presented to the Ontario Legislature through Premier Gordon D. Conant, Dr. Thomas H. Hogg, chairman and chief engineer of the Commission, outlined Ontario's power situation and salient features of the new agreement. All the facts, he stated, pointed to the conclusion that "the Ottawa river must be regarded as the source of any large development of hydraulic power to meet the growing demands of war industry."

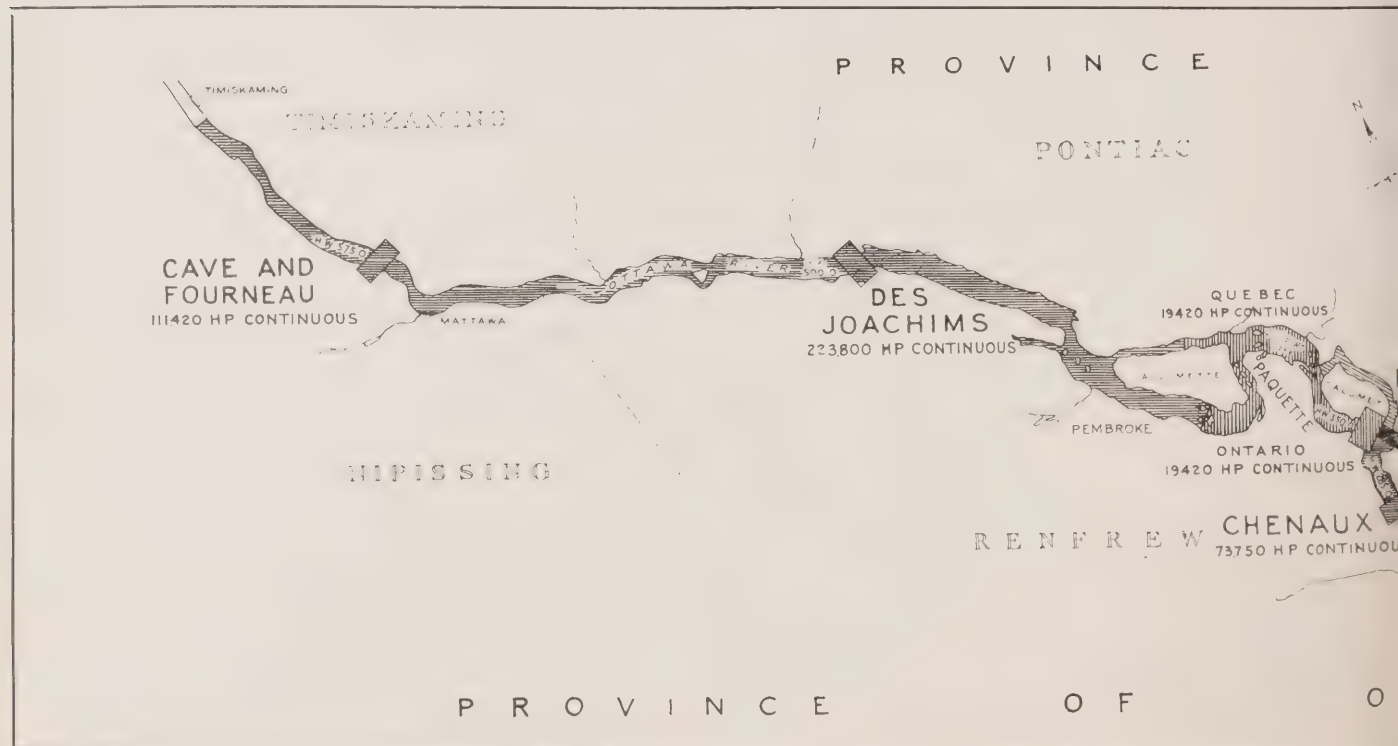
# Onward T

## Development Of Seven Sites Along International Section Will Yield 850,000 Continuous Horsepower—Ontario And Quebec To Share Equally in Benefits—Agreement Of Major Significance

Until the spring of 1942, the statement pointed out, there had been repeated assurances that the United States Congress would implement the St. Lawrence agreement. As the Dominion, the Province of Ontario and the Commission were pledged to proceed with the St. Lawrence if endorsed by Congress, it was impossible to consider another major development until the St. Lawrence issue became clarified. When this issue was finally clarified, the Commission turned to the Ottawa.

Reasons for selecting the Ottawa are set forth in Dr. Hogg's statement as follows: "Failure of the United States to implement the St. Lawrence agreement; the very great improbability, amounting to almost an impossibility, of securing an agreement with the United States for additional large scale power development at Niagara in time to provide adequately for war power growth; the advantages of reserving the remaining Madawaska sites for development at 60 cycles, and the fact that the balance between resources and loads and the probable load growth on each system demand that the next power development be made at 25 cycles."

The Ottawa river agreement is one of far-reaching significance, both from the long term power development point of view and from the short term war power point of





# The Ottawa

view. By allocating specific sites to each province in undivided units, it eliminates the dependence of each province upon the other which is unavoidable so long as joint development is the only possible procedure. It eliminates, too, the uncertainty as to whether or not either province (or in the case of Quebec its agent or private company) will join with the other when desired to do so, and enables each to plan for the future with assurance that its plans can be carried out on a dependable time schedule. Moreover, it solves certain long-standing interprovincial problems associated with the river, which under other circumstances, might have presented almost insuperable difficulties, but which under the impetus of war power demands have been successfully solved. Quite apart from these considerations, important and valuable as they are from the long term point of view, the advantage of opening the way for a substantial power development at Des Joachims, which under favourable Canadian and United States priority ratings could be completed in two years from date of authorization, is also regarded as of prime importance.

## Comparison of Sites

Figures for continuous capacity, at the various Ottawa river sites involved, as set forth in the new agreement, are taken from an official publication of the Department of Lands and Forests, entitled "Water Powers of the Province of Ontario, 1931." While these figures should not be confused with dependable or installed capacity of a power plant, they serve as a basis of comparison. The sites which will be allocated to Ontario and the estimated continuous capacities of these sites are as follows:

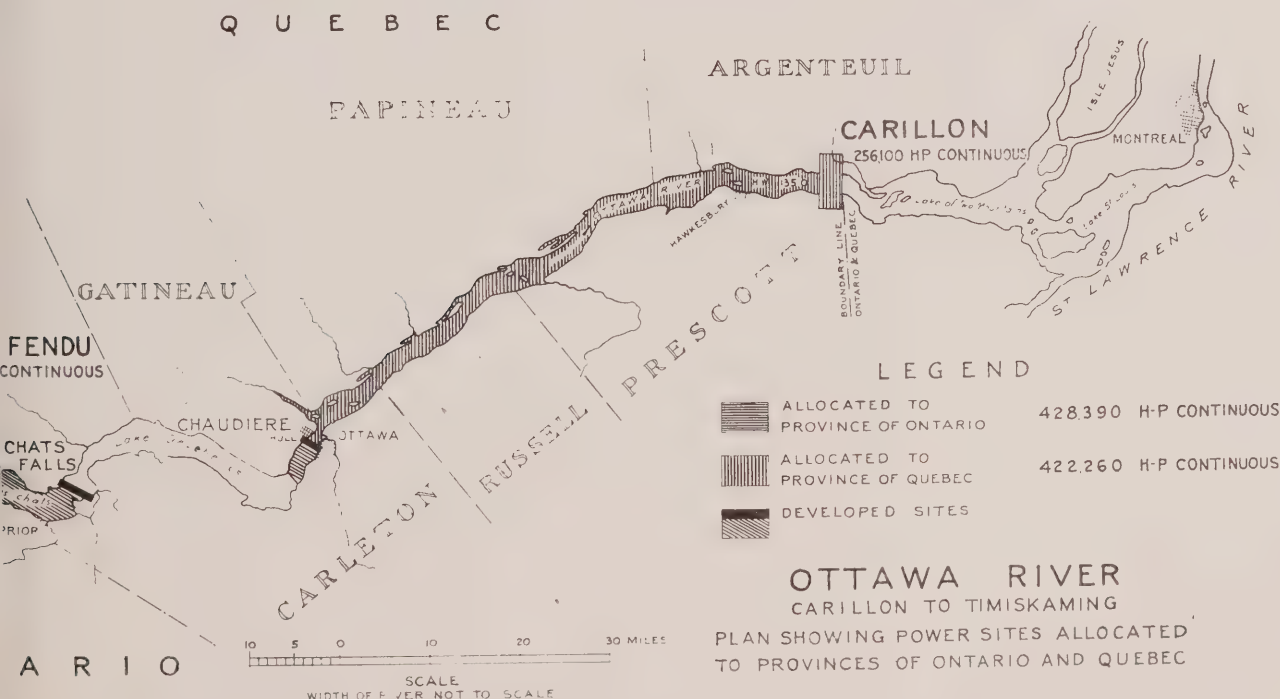
Site	Continuous Capacity in Horsepower
Cave and Fourneau .....	111,420
Des Joachims .....	223,800
Chenault or Portage du Fort .....	73,750
Paquette (upper half) .....	19,420
Total .....	428,390

The following are the sites allocated to Quebec:

Site	Continuous Capacity in Horsepower
Rocher Fendu (and Bryson) .....	146,740
Carillon .....	256,100
Paquette (lower half) .....	19,420
Total .....	422,260

Although the Carillon site, which now comes under the jurisdiction of Quebec, had been regarded by many as a future source of 60-cycle power for Eastern Ontario, a study of both the engineering and economic facts shows that it would be far too large an undertaking for this system. Among other things, these facts reveal that Carillon, which would make available approximately 350,000 horsepower at the outset, is seventy miles farther away from the load centre of the Eastern Ontario system than Barrett Chute and the undeveloped sites on the Madawaska river where a reserve of 150,000 horsepower is available for Eastern Ontario. Dr. Hogg has stressed the fact that the Carillon development would have imposed a prohibitive and unavoidable financial burden upon Eastern Ontario. In point of size and location, the Chenault or Portage du Fort site is better suited to the requirements of Eastern Ontario than any of the remaining undeveloped sites on the Ottawa river that could be allocated in its entirety to Ontario.

(Continued on next page)



With a continuous capacity of about 75,000 horsepower and capable of supporting a development of 125,000 horsepower of dependable power at the load factor of that system, Chenaux has been tentatively reserved to safeguard the interests of Eastern Ontario, which has a load and rate of growth about one-tenth that of the Niagara system.

## Des Joachims To Be Developed First

At the same time, the Carillon site, when considered from the 25-cycle angle, is about 290 miles from Toronto, whereas Des Joachims, Cave and Fournau are approximately 200 miles from Toronto. Des Joachims has the additional advantage of being within transmission distance of the Abitibi 25-cycle system at Copper Cliff and affords an excellent opportunity to inter-connect the Niagara and Abitibi systems, to the mutual advantage of both. Another factor which has been considered is that the output of Cave and Fournau could conveniently and economically be fed into a tie line between Des Joachims and the Abitibi system.

From Quebec's point of view, Carillon is regarded as the most attractive of all the Ottawa river sites. It is about forty miles from Montreal, while Des Joachims, the only site comparable in size, would be at least 160 miles farther from Montreal, the nearest large Quebec market.

In view of the many advantages it has to offer, Des Joachims will be the first Ottawa river site which will be developed by the Commission. At the outset, it will make available a continuous output of 225,000 horsepower and a peak output of about 310,000 horsepower. Allowing for transmission losses this would amount to approximately 280,000 horsepower delivered at Burlington. Actual cost of the construction of a plant at this site is estimated at close to forty million dollars.

Another advantage of the Des Joachims project is to be found in the fact that the transmission lines will not be too close to existing lines from Beauharnois and Chats Falls to Burlington. This is important because it is unlikely that all three routes would be within a storm area at the same time.

To understand the importance of the Ottawa river sites in general, and of Des Joachims in particular, so far as Ontario is concerned, it is necessary to visualize the power picture in its true perspective. From the outbreak of hostilities, Hydro has been the all-important driving force behind this province's war production programme, which has been steadily increased month by month through the addition of new war-gear industries, particularly in Southern Ontario. All available power resources were marshalled to keep pace with unprecedented demands for more and more electricity required for the building of ships, planes, tanks, guns and military vehicles of all types. Included in this industrial wartime network are also the many plants now engaged in turning out munitions and other vital supplies.

## Must Continue Conservation

Last September these demands for power reached the point where the Dominion Power Controller found it necessary to impose certain restrictions, while Hydro called upon all domestic consumers in power shortage areas to co-operate in Ontario's all-out war effort by voluntarily curtailing the use of electricity.

While these measures have been successful in easing the difficult problems confronting the Commission, Dr. Hogg has stressed the need for continued conservation of power

## GEORGE E. CHASE

who is manager of the Bowmanville Public Utilities Commission which recently cleared off all debt charges against the local Hydro system in half the specified time.



if Hydro is to meet future wartime demands without additional restrictions. But for the mandatory and voluntary saving, the demand in 1942 would have exceeded that of 1941 by approximately 275,000 horsepower, representing a growth of about 14 per cent.

In an address before a joint O.M.E.A. and A.M.E.U. convention session in Toronto recently, the Commission's chairman set forth the present power situation in these words: "Taking what appears to be the most reasonable view of the somewhat meagre and certainly inconclusive data, it appears that the Commission should be prepared for a net increase in demand in December, 1943, from about 60,000 to 120,000 horsepower, or a range in primary demand from 2,017,000 to 2,077,000 horsepower for the Southern Ontario systems (Niagara, Eastern Ontario and Georgian Bay). The dependable capacity, including the additions during the present year, will be more than 2,030,000 horsepower. Under favourable water conditions, actual resources might be as high as 2,070,000 horsepower, and then again they might be very much less than either of these figures."

## Future Demands Unpredictable

After presenting these salient facts and figures, Dr. Hogg made it clear that it was essential that adequate supplies of Hydro power should be available at all times for the war effort in Ontario. He also expressed the conviction that the maintenance of reserves in the soundest possible condition was one of the greatest contributions the Commission could make to the welfare of partner municipalities and their consumers.

Over the past thirty years, Hydro, a co-operative municipal enterprise, has successfully demonstrated how low-cost power can be supplied to serve the best interests of social and economic life.

In the light of all these facts, and because the duration of the present war and possible new demands and emergencies are unpredictable, the Ottawa river agreement assumes major significance. Furthermore, as Dr. Hogg emphasized, Hydro will play as dominant a part in post-war reconstruction as it is playing today in time of war.

Development of Des Joachims and other Ottawa river sites is, therefore, regarded by the Commission not only as necessary and logical in building the required reserves for possible future wartime demands, but as a measure which will enable Hydro to contribute to a better and fuller life after victory has been won.





Soon these deadly anti-aircraft guns will be used to advantage in clearing the skies of enemy planes. This illustration shows them in the final stages of assembly at the Genalco plant in Peterborough.

**By A. M. PERE**

**T**HEY'RE "going great guns" in a very literal sense at Peterborough where Hydro is helping pace industry's contribution to victory.

In this busy town of 28,000 population are more than 9,000 domestic, rural, commercial and industrial consumers of electricity, and approximately forty important industries, directly and indirectly engaged in war work, including one of the largest ordnance plants in the British Empire.

Erected next to the Canadian General Electric Works, and bearing the name "Genalco," this spacious wartime workshop has a floor area of more than nine acres and is operated for the government by C.G.E. Inside these well-guarded General Electric and Genalco structures, some 7,500 people are engaged in the business of victory twenty-four hours a day.

#### **Hydro Is Nerve Centre**

Many graphic stories could be told about the activities in the bright, modern and smooth-working Genalco plant alone. It is about a sixth of a mile in length, and inside one will find row upon row of gleaming machine tools used in the production of some 1,200 separate parts required for each 3.7-inch gun mount which weighs  $7\frac{1}{2}$  tons. When completed, a mount is equipped with an impressive array of precision instruments and mechanism employed in the operation of the gun whose long, lean, menacing muzzle flashes 26 lbs. of destruction at cloud-combing raiders many miles overhead every time it speaks.

At these two C.G.E.-operated plants they're turning out many other things important to victory such as instru-

ments for aircraft and ships, electrical equipment, mighty 100,000 horsepower generators and powerful searchlights.

Among other Peterborough plants which are playing an important wartime role are the DeLaval Company, the Western Clock Company, Canadian Outboard Marine, Canadian Raybestos, Dominion Woolens, Quaker Oats Company and Canada Packers.

Hydro, which has helped speed the industrial and economic growth of the city and made available the increasing benefits of "electrical living" in the days of peace, is today the nerve centre of the war production programme.

The history of Peterborough's Utilities Commission goes back to the year 1902 when a commission was formed to operate the water works system. At that time, the late T. H. G. Denne was mayor, and the only chief magistrate to have served on the commission. In this respect the city is unique among Ontario municipalities. Certain differences in municipal opinion in these early days are said to have been responsible for the enactment of a private act which precludes the mayor as a member of the commission. Most of the commissioners, however, are former mayors.

#### **Present Commissioners**

In 1914, the name of the commission was changed to "Peterborough Utilities Commission." Here again, the city is unique, for the word "public" was not used in designating the utilities commission. Peterborough's proud record of achievement as a Hydro municipality dedicated to the service of the people, however, shows that this has been a mere technicality.





The commission's office where bills are paid, is located at 139 Simcoe street, while the office building and adjoining substation at 223 Aylmer street, were opened in 1924. Those who comprise the present commission are Gordon S. Matthews, chairman; G. A. Macdonald and Fred Hills. Although James Hamilton, the present mayor of the city, is not a member, he keeps in close touch with Hydro affairs.

Ross L. Dobbin, the genial and versatile general manager of the utilities, told *Hydro News* that when Peterborough became a Hydro municipality in 1914, it had an initial load of 3,500 horsepower. Today, it runs between 11,000 and 12,000 horsepower and fifty per cent is direct war load. The Genalco plant, however, receives 1,800 horsepower direct from the H.E.P.C. In the city proper there are more than 6,000 domestic consumers, with rural consumers, including those in the Lakefield district, numbering more than 2,300. In the commercial and industrial classifications there are approximately 1,100 customers. Mr. Dobbin also revealed that there are in excess of 300 miles of rural and city Hydro lines.

A highly respected and active figure in the community, Mr. Dobbin has been called upon to provide the driving force behind many war-time campaigns and ventures. In May, 1941, he was appointed chairman of the local committee on Wartime Housing—a job which he tackled with characteristic vigour.

In discussing Peterborough's housing shortage, he stated that there had been an influx of approximately 5,000 people since the outbreak of hostilities and the subsequent development of local war industries.

When the housing committee set to work there were 250 families waiting for homes. The manner in which this situation has been handled is revealed by the fact that more than 500 wartime homes will have been erected by May 1 of this year, in addition to 100 homes built by private enter-

(Continued on page 20)

An army of approximately 7,500 employees are on the payrolls of the Genalco and the C.G.E. plants at Peterborough where anti-aircraft guns, instruments for aircraft and ships, searchlights, generators and other vital war equipment and parts are being made. A few photographic impressions of the activities in these plants are shown here.

No. 1—Grinding sole plates in the plate room.

No. 2—Grilling a 3.7-inch mounting for the elevating plate.

No. 3—Lifting a 3.7-inch anti-aircraft gun by overhead crane.

No. 4—Winding stator frames for 60-cycle frequency motors.

No. 5—View of main machine shop in the Genalco plant.



# Around the Hydro Circuit

In the annals of the Peterborough Utilities Commission, the name of Matthews is one which is associated with long, untiring and faithful service to the public.

**Gordon S. Matthews**, who was born in Peterborough in 1896, was first elected to the commission in 1925. He has been chairman for the past sixteen years, and has had an acclamation every year since his election. His father, T. Frank Matthews, who is a member of the Toronto Harbour Commission and vice-president of the C.N.E., also has the distinction of having been chairman of the commission for sixteen years. He was a member of the original water-works commission of 1902, which became the Peterborough Utilities Commission in 1914, and embraced Hydro service in 1929. The tenure of office of Mr. Matthews, Sr., terminated in 1919.



G. S. Matthews

Gordon Matthews, the present chairman, is a nephew of the Lieutenant-Governor of Ontario, and in business life is local manager of Canada Packers Limited, his association with that company dating back more than twenty years. He served for three years in the last war as a lieutenant with the 3rd Canadian Divisional Trench Mortars, having been in his third year at the University of Toronto when he joined the army.

Always keenly interested in the progress of Hydro in Peterborough and throughout the province, Mr. Matthews has been an active member of the Ontario Municipal Electric Association, and was president of that body in 1938 and 1939.

He is also past president of the Y.M.C.A., and a member of the Rotary Club, while he is keenly interested in hockey and baseball. When the war is over, Mr. Matthews who loves "a wet sheet and a flowing sea, a wind that follows fast," is likely to resume his hobby of sailing.

Mr. Matthews has one son, Harold, aged 20, in the army, and another, Gordon, Jr., 17, in the navy.

**George A. Macdonald**, who has served on the Peterborough Utilities Commission for three years, is of Highland Scottish descent and a native of historic West Zorra in Oxford County.



G. A. Macdonald

During his forty years in Peterborough, Mr. Macdonald's time and talents have been devoted ungrudgingly to public service. He was an active member of the council for ten years and held the position of chief magistrate of the city in 1936. As president of the Chamber of Commerce he has contributed much to Peterborough's progress and enterprise.

For the past twenty-eight years, Mr. Macdonald has been identified with the DeLaval Company, of which he is superintendent.

In his early days in Peterborough, he gained a reputation

as an athlete, having played baseball, rugby and hockey. During the South African War, Mr. Macdonald served as a trooper with the Mounted Infantry.

**Frederick Hills** who was elected to the Peterborough Utilities Commission on January 1, 1942, is a native of Toronto, who has been engaged in the insurance business in Peterborough for the past twenty-three years.



Frederick Hills

During the last war, Mr. Hills served as a lieutenant with the Royal Canadian Army Service Corps and was in France for two years. He now holds the rank of captain and has charge of the Peterborough Home Guard Company.

Mr. Hills' hobby is golf, but he modestly declares, "I'm only a half-baked golfer."

One of Peterborough's prominent and most popular personalities is **Ross Leonard Dobbin**, general manager of the Utilities Commission, who was born in Lindsay in 1882.



R. L. Dobbin

Mr. Dobbin is not only a Bachelor of Applied Science (University of Toronto, 1915) but he is a very eligible bachelor in the most literal sense of the word. As a boy he attended public school and collegiate in Peterborough.

In 1914, he became water works superintendent, and in 1926 he was appointed to the position which he holds today. During an active career, Mr. Dobbin's services have been enlisted by many technical and public institutions. He is a past chairman and secretary of the Peterborough Branch of the Engineering Institute of Canada, and was vice-president of the Ontario Zone in 1936 and 1937. He was also a member of the council of the Association of Professional Engineers of Ontario, while he has been a member of the American Water Works Association since 1914. In 1931 and 1932 he was elected to the presidency of that association—an honour which has come the way of only two other Canadians. He was president of the Association of Municipal Electrical Utilities in 1930, and president of the Electrical Employers Association of Ontario in 1935 and 1936, and a member of the Senate of the University of Toronto from 1927 to 1932.

Mr. Dobbin's record shows that he is a past president of the Peterborough Y.M.C.A., the Rotary Club, the Curling Club, the Peterborough Club, and the Peterborough Golf and Country Club, while he is a past director of the Peterborough Chamber of Commerce. He is at present a director of the Peterborough Industrial Exhibition and the Children's Aid Society, and a trustee of the Y.M.C.A.

In addition, Mr. Dobbin is campaign manager for the local Red Cross and Community Fund, and is also active on the Ontario Loan and War Finance Committee.

## FATS CAN FIGHT

Every Spoonful Needed To  
Cook Hitler's Goose

By EDITHEMMA MUIR  
Hydro Home Economist

**F**AT provides energy—for guns as well as diets. Yes, the fat that provides energy for growth and activity of the human body also provides energy which fires shells from guns.



Edithemma Muir

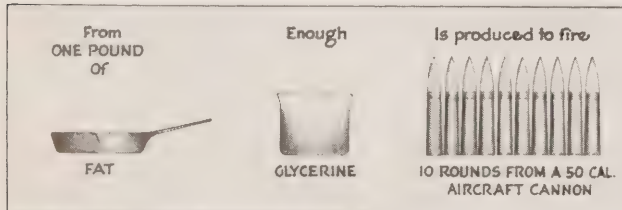
All available food fats should be used to their fullest extent—for keeping your family strong and energetic. Every spoonful left over should be salvaged. No amount of fat is too little to save, so urgent is the country's need for glycerine. To meet this need the women of Canada are being asked to save forty million pounds of fat this year. Every pound saved will produce enough glycerine to fire ten rounds from a 50-calibre airplane cannon pointed at the enemy.

### More Broiling—Less Frying

Two tablespoons of fat a day is the requirement for each adult—obtained from cream, lard, butter, shortening, pork trimmings or rendered fats. A family of two needs 1¾ lbs. of fat per week—including butter allowance (which is ample at present) and fat for cooking. Each child under 12 years requires from ¼ lb. to nearly a pound, depending on age and size.

Less frying and more broiling means a more thrifty use of fats. Meals will be pleasantly rich and easily digested—the kind the family enjoys. When food needs are taken care of, strain your left-over fats into a wide-mouthed salvage can. It takes only 31 tablespoons of fat to make a pound—one tablespoon a day for a 31-day month. When a pound has accumulated, take it to your meat dealer—he will pay you for it and turn it over to a rendering plant to be made into tallow. The tallow is sent to soap manufacturers, for it is in the soap-making that the glycerine is extracted from the fat. The glycerine, in its turn, is sent on to the explosive manufacturers—and a shell will whine its way toward the enemy with the help of your fat.

It takes time to make fat into glycerine, so take your tin of fat in today.



### What To Do With Your Fats

1. Save all waste cooking fats. Render pieces of fat meat slowly. Clean out broiler pans and roast pans with a scraper or wooden spoon.
2. Pour into clean, wide-mouthed cans such as coffee

tins or lard pails. Strain fats as you pour them to remove all foreign matter.

3. Keep fat containers in electric refrigerator or cool place until you have collected at least 1 lb.
4. Take your fat to your meat dealer who is co-operating patriotically in this drive. He will pay 4 or 4½ cents per pound for your dripping fats. Bones and scrap fat should also be taken to meat dealers.
5. You may donate fats and bones to your local Voluntary Salvage Committee, if one has been organized.
6. Don't take less than 1 lb. of fat to your meat dealer; don't take fats to meat dealers in glass or cardboard containers; don't let fats stand near heat where they will become rancid; don't take fats and bones to meat dealers on Fridays or Saturdays (usually rush days) and don't ask him for dog bones in exchange.

## A.M.E.U. REPORTS

Reports on the activities of various A.M.E.U. committees during the year 1942 were presented to delegates attending the recent convention in Toronto. In the main, it was pointed out that while certain committees find their sphere of action curtailed somewhat under wartime conditions, every possible assistance is being rendered to promote the electrical supply features of Ontario's war effort.

Highlights of the reports follow:

### Regulations and Standards Committee

This committee rendered some assistance in the study of proposed new standards for certain pole line hardware, because of the necessity for rigid conservation of metals for war needs.

The Canadian Engineering Standards Association undertook the preparation of revised standards for line hardware, and the above A.M.E.U. committee prepared and sent out a questionnaire to all Hydro systems, together with a proposed list of line hardware, requesting endorsement or further constructive criticism.

### Merchandising Committee

Information on government regulations, as they pertain to Hydro shops, has been supplied upon request by the Sales Promotion Department of the H.E.P.C.

Merchandise and repair materials have become increasingly difficult to procure during the year, and many substitutes and articles of inferior quality have been tried. A number of committee members have contacted various Dominion Government departments, explaining the need of repair supplies in order to keep equipment in service.

Standardization of electric range switches has been discussed and a committee has been set up by the C.E.S.A. to further this matter.

### Committee on Accident Prevention

This group did not meet during 1942, but it was intimated that a constructive programme is being formulated for the present year.

### Special Committee

During the year this committee dealt with many questions concerning the operation of electric utilities in war-



time. One matter had to do with furnishing advice to the different Government controllers regarding electric utility problems. It was suggested that an advisory committee be appointed from the electrical utilities in Canada to present the utility viewpoint on any contemplated restrictions. The suggestion was not acted on by the controllers.

A questionnaire was forwarded to some 200 municipalities asking them to list their surplus stock of materials. Replies were received from fifty, none of which reported a surplus.

The question of re-sealing watthour meters was considered. A draft of a proposed brief to be sent to the Metals Controller and Power Controller was reviewed. It was decided to approve the brief and recommend to the executive that the re-seal period of watthour meters be extended as a war measure. The recommendation has been acted on by Order-in-Council No. P.C. 6835, passed August 4th, 1942.

## A.M.E.U. COMMITTEES—1943

Standing committees of the Association of Municipal Electrical Utilities for the year 1943, drafted at the meeting of the executive committee on February 9, are presented below. In addition to the names listed, the president, R. B. Chandler, is ex-officio member, and the secretary, S. R. A. Clement, as general secretary of the association, is a member of all committees.

The executive committee is made up of the past-president and the elected officers of the association. These were listed in the February number of Hydro News on pages 5 and 10.

**PAPERS COMMITTEE:** A. W. Bradt, Hamilton, chairman; G. E. Chase, Bowmanville; R. S. Reynolds, Chatham; C. E. Schwenger, Toronto; L. G. McNeice, Orillia; C. W. Hookway, Canadian Westinghouse Company, Toronto and H. D. Rothwell, H.E.P.C. of Ontario, Toronto.

**CONVENTION COMMITTEE:** S. W. Canniff, Ottawa, chairman; R. L. Dobbin, Peterborough; F. S. Babcock, Moffats Limited, Weston; F. A. Mahoney, Canadian General Electric Company, Toronto; E. G. McCracken, Sangamo Company, Toronto; W. Dixon, Canadian Westinghouse Company, Toronto; J. A. Clish, Northern Electric Company, Toronto; A. H. Frampton and T. C. James, H.E.P.C. of Ontario, Toronto.

**REGULATIONS AND STANDARDS COMMITTEE:** J. E. Teckoe, Jr., Tillsonburg, chairman; W. R. Catton, Brantford; R. L. Dobbin, Peterborough; T. R. C. Flint, Toronto; A. B. Manson, Stratford; C. J. Moors, Fort William; V. A. McKillop, London; O. H. Scott, Belleville; J. E. Teckoe, Niagara Falls; O. C. Thal, Kitchener; A. C. Hall and J. J. Jeffery, H.E.P.C. of Ontario, Toronto.

**COMMITTEE ON ACCIDENT PREVENTION AND HEALTH PROMOTION:** R. J. Smith, Perth, chairman; P. B. Yates, St. Catharines; C. E. Schwenger, Toronto; J. W. Peart, St. Thomas; R. Harrison, Scarborough Township; V. A. McKillop, London; R. L. Dobbin, Peterborough; A. B. Manson, Stratford; A. W. Murdock, B. F. Mulholland, V. A. Beacock and Wills MacLachlan, H.E.P.C. of Ontario, Toronto.

## NO FOOLIN'!

Even if the date is April 1 there's no foolin' about the announcement that George Rush will be in the auditorium of the H.E.P.C. building at 4.30 p.m. on that date.

Mr. Rush, who is associated with the Ontario Department of Agriculture, is going to address Hydro Victory Gardeners on "What Vegetables Shall I Grow?"

This is only one in a series of meetings which are to be held during the campaign. The dates and times of other meetings in the auditorium, and speakers who will be in attendance are as follows:

**April 7: 4.30 p.m., C. L. Thomson, O.A.C., Guelph; subject: "Soils: Preparation, Cultivation and Fertilizing."**

**April 21: 4.30 p.m., L. H. VanCleemput, University of Toronto; subject: "Planting, Transplanting and Seed Treatment."**

**May 12: 4.30 p.m., Fred Corin; subject: "Disease and Pest Control."**

**MERCHANDISING COMMITTEE:** R. S. Reynolds, Chatham, chairman; O. H. Scott, Belleville; F. S. Rhoads, Windsor; R. W. Turner, Hamilton; H. R. Hatcher, Galt; A. W. J. Stewart, Toronto; O. C. Thal, Kitchener; F. Wilkinson, London; E. Parsons, Sarnia; N. Robinson, Stratford; S. W. Canniff, Ottawa; R. L. Dobbin, Peterborough; A. W. H. Taber, North Bay; M. J. McHenry, J. A. Blay and J. J. Jeffery, H.E.P.C. of Ontario, Toronto.

**RATES COMMITTEE:** A. B. Manson, Stratford, chairman; P. B. Yates, St. Catharines; G. E. Chase, Bowmanville; W. R. Catton, Brantford; O. H. Scott, Belleville; D. E. Charters, Windsor; R. S. Reynolds, Chatham; A. W. Bradt, Hamilton; A. W. H. Taber, North Bay; T. R. C. Flint and F. W. Peasnell, Toronto; J. J. Jeffery and G. F. Drewry, H.E.P.C. of Ontario, Toronto.

**COMMITTEE ON ACCOUNTING AND OFFICE ADMINISTRATION:** C. A. Walters, Napanee, chairman; Geo. Appleton, Toronto, vice-chairman; R. S. King, Midland; J. W. Hammond, Hamilton; C. W. Eastwood, London; A. M. Bowman, Elmira; T. W. Houtby, Welland; H. Clegg, Peterborough; O. H. Scott, Belleville; G. W. Grabb, Chesley; S. E. Preston, Kitchener; J. A. Bannister, Point Edward; S. Watt, Guelph; J. E. Teckoe, Jr., Tillsonburg; A. B. Manson, Stratford; W. E. Wallace, Windsor; P. E. Battram, Sarnia; A. E. Ditchburn, Strathroy; W. H. Gibbie, Oshawa; A. D. Nelson, Kingston; George A. Phillips, Jr., Smiths Falls; R. H. Martindale, Sudbury; A. W. H. Taber, North Bay; E. L. Gothard, Brantford; Clarence Sothern, St. Thomas; Andrew Kellock, Jr., Huntsville, and R. M. Bond, H.E.P.C. of Ontario, Toronto.

**AUDITORS:** J. S. McGregor, Toronto, and R. M. Bond, H.E.P.C. of Ontario, Toronto.

## PETERBOROUGH COMMISSION—1902



Shown above is a picture of the men who comprised Peterborough's first Water Works Commission in 1902, T. F. Matthews being the only surviving member of this group. The names, from left to right, are T. F. Matthews, William Hill, T. H. G. Denne and Wilson Henderson, who was superintendent.

(Continued from page 16)

prise. Mr. Dobbin intimated that 150 families were applying for the last 125 homes now nearing completion, while he also stated that the construction of a large staff house to accommodate 500 single men had just been completed.

### More Than Eighty Employees

The efficient direction Mr. Dobbin has given in connection with local wartime housing and other campaigns is in keeping with the long and noteworthy record of service he has established as general manager of the utilities which has more than eighty employees on the payroll.

The present commissioners and Mr. Dobbin are united in their determination that Hydro in Peterborough will play its full part in hastening victory, and in helping to speed the transition to new and greater peacetime achievements.



This illustration shows the office building and adjoining substation of the Peterborough Utilities Commission located at 223 Aylmer street.

## Noteworthy Achievement Recorded By Bowmanville

### Pays Off All Debt Against Local Hydro System Within Half Specified Time

To have cleared off all debt charges against the local Hydro system within half the specified time is the noteworthy achievement of Bowmanville Public Utilities Commission.



W. R. Strike

On November 1, 1931, the town took over the local Hydro system from the H.E.P.C., and payments on the 20-year \$71,000-debenture issue, floated to finance the purchase, began in January, 1932.

During the ten years of successful operation of the system, the rates have been reduced from the equivalent of 5 cents and 2 cents to 3½ cents and 1 cent, while a sum exceeding \$7,000 has been given back in rebates to customers.

The first commission comprised T. H. Knight, chairman; T. S. Holgate, ex-mayor; and George W. James, mayor. Other citizens who have served on the commission since that time are: F. W. Nelles, M. J. Elliott, W. R. Strike, G. A. Edmondstone, C. G. Harris and R. O. Jones. Those who comprise the present Bowmanville commission are: W. R. Strike, chairman; M. J. Elliott and R. O. Jones.

Bowmanville's fine record not only reflects credit upon the men who have served on the commission, but it also focuses attention upon the efficient administration of George E. Chase, manager of the utilities.

The total load when the system was taken over in 1932 was 1,800 horsepower, and today it is in excess of 2,700 horsepower.



A photographer arrived when this conference was in progress at the Peterborough Utilities Commission office. Seated at the desk is George R. Taylor, clerk and switchboard operator, while those standing are (from left to right): Harry G. Beatty, electrical superintendent; E. Norman Welch, meter foreman; R. L. Dobbin, general manager; and Gerald C. Porter, accountant.





## Annual Dance Aids War Services Fund

**A** TOTAL of approximately \$300, representing the proceeds from this year's annual dance conducted under the auspices of the Ontario Hydro-Electric Club, has been added to the club's War Services Fund. Since the inauguration of this fund three years ago, the members have raised an average of \$9,000 a year through voluntary subscriptions and social events.

On this page are recorded three camera impressions of the dance held at the Royal York Hotel, Toronto, on February 26 when a large gathering of H.E.P.C. employees and their friends took part in what proved to be an enjoyable evening. The upper illustration shows a section of the crowd. The centre reproduction directs attention to the principals who contributed a delightful divertissement to the evening's programme. Flanked by Miss Edithemma Muir, Hydro Home Economist (left), and Miss Frances Powell, R.N., H.E.P.C. nurse, W. R. Harmer as "Farmer Harmer," handled the barrow and garden tools with facility, although D. I. Nattress was not quite at home in the role of "The Good Earth." In this sketch, Miss Muir, representing nutrition; Mr. Harmer, representing the victory gardener and garden products, and Miss Powell, symbolizing health, sought to stress the important contribution gardens can make in hastening victory.

The following committee members comprise the group shown at the bottom of the page (left to right): Mr. and Mrs. W. V. Morris, Mr. and Mrs. R. M. Laurie and Mr. and Mrs. Fred Pope.



## in the Editor's MAIL BAG

"If I remember rightly I mentioned on some previous occasion that the average layman finds himself thoroughly bewildered whenever he is confronted by an expert on power matters who talks without end about H.P.'s and K.W.H.'s without ever elucidating what they might mean and in what relation they stand to each other. Imagine my pleasant surprise then when I find a rather simple explanation of the whole thing in the article entitled "'Watts' Horsepower' in the February issue of Hydro News. I would like to express my thanks to your organization for setting me straight. Now if you could only make some of us financial writers clear up the muddle that we create whenever we want to appear profound I suppose we could all get along with each other a lot better."—Edward C. Ertl, Ontario Editor, The Financial Times.

### T. R. MILLAR DIES FOLLOWING ILLNESS

T. Russell Millar, aged 58, of the electrical engineering department, H.E.P.C., died recently following a lengthy illness.

Born in Kingston, he received his primary education at local schools, and later attended Queen's University, graduating in 1906. "Russ", as he was known to his colleagues, came to the Commission 27 years ago from the Electric Power Company, and for a number of years was in charge of the station section. Since September, 1938, he had held the position of section head for the station section.

Mr. Millar was a member of the Association of Professional Engineers of Ontario; American Institute of Electrical Engineers; Delta Lodge, A.F. & A.M.; H.E.P.C. Quarter Century Club, and for a number of years was associated with the Royal Canadian Yacht Club.

### LADIES' ANNUAL BRIDGE

"The biggest and best bridge yet!"

In these words, a member of the arrangements committee announced the ladies' annual bridge which will be held under the auspices of the Ontario Hydro-Electric Club on April 3 in the Eaton Auditorium, Toronto.

All club members and their friends are urged to attend. There will be a prize for every table, as well as lucky number prizes, and the entire proceeds will go to the club's War Services Fund.

Members of the committee are: Jean Wilson, convener; Helen A. Beatty, secretary; Phyllis Foreman, treasurer; Ethel Allen; Lois Brittain; Mrs. Helen Dunlop; Grace Coughlin; M. B. Fensom; D. E. Fromow; Mrs. Margaret Gahagan; Marion Goudie; Rita Gouin; Adeline F. Hambly; Mrs. Nora Hollings; Mrs. M. G. Page; Rita Quigley and A. M. Watt.

### THE REMARKABLE MR. KELLY

(Continued from page 5)

Building, is a medal he won as a high-wheel artist.

He had a great liking for fancy ice skating and took part in many competitions. He took lessons from a professional skater in Clinton, named Potts, and the team of Potts and Kelly later performed at all the major carnivals in different towns. On one occasion, Mr. Kelly recalls laughingly, they



Uh huh, it's a rubber plant all right. It's 20 years old, stands 8 feet high, has a span of 25 feet, and for the past 8 years it's been adorning a room in the Toronto Hydro-Electric System building on Carlton street. The owner, Miss Gertrude Jones, shown beside the plant, originally gave it as a gift to her late mother on Mother's day, 1923. At that time no one ever thought it would grow, Miss Jones says.

arrived quite early for a certain skating contest. To fill in the time they went out to the rink and did a few preliminary turns, brushing up on their technique. Some of the other competitors happened to be watching, and when they saw the pair performing with such finesse, they all withdrew from the contest.

The closing of the Clinton to Wingham branch of the old London, Huron and Bruce railway line in April, 1941, had a great sentimental interest for Mr. Kelly. His father, while reeve of Blyth, had fought hard to have the line built and the first run made over the tracks in December, 1875, was a memorable event. Young "Jack", who was going on 17 at the time, was the only boy on the train and he was allowed to pull the whistle at crossings and throw stove-wood into the firebox as the train roared through the bush at 20 miles an hour. He remembers that the train had a hand brake and that a passenger was sharply reminded of the fact whenever the train stopped. Still vivid in his mind is the sight of bewhiskered reeves and councillors boarding the train at various stops, as part of the official opening of the line.

When that branch of the line was closed in April, 1941, Mr. Kelly, being the only person still living who had been on the first run 65 years earlier, thought he would also like to be on board for the final run. Conditions prevented him from making that last trip, but he delegated J. E. Mason, an old friend, to go along in his place.

Mr. Kelly and his wife celebrated their fiftieth wedding anniversary in 1933. Mrs. Kelly, the former Sarah E. Colloton of Blyth, died in 1936.

Mr. Kelly has two sons and one daughter living, Joseph C. Kelly of New York, Basil L. Kelly of London, Ontario, and Miss Helen Kelly of Goderich, while two other daughters are deceased.

John B. Kelly is happy at his work in the Public Utilities office in Goderich. He has treasured memories of the past, lives to the fullest in the present, and has great hopes for the future of Canada. Today he says his work is his hobby, and nothing else matters. "In the days to come", he declares with conviction, "Hydro as we know it in Ontario will spread all across Canada, from coast to coast!"



## Hydro Power Used In 1942 Breaks All Past Records

With all available power resources operating at maximum capacity, Ontario's total energy output during 1942 exceeded all previous records by 11.5 per cent. The total output for all systems reached 11 billion, 675 million kilowatt-hours.

A further upward trend is indicated in the January, 1943, summary of loads. The demand for primary power during that month exceeded that for the corresponding month last year by approximately 52,000 horsepower, or an increase of 2.3 per cent, while combined primary and secondary load demand during the same period increased by 10,500 horsepower.

Based on the maximum 20-minute peak horsepower load for the respective months, the summary portrays load conditions on all four H.E.P.C. systems and the Northern Ontario Properties. The demand in the Niagara System, focal point of southern Ontario's war industries, shows a primary load increase of more than 47,000 horsepower.

### PRIMARY AND SECONDARY LOADS

	Maximum 20-Min. Peak H.P. Jan., 1943	Maximum 20-Min. Peak H.P. Jan., 1942	Per Cent Increase
Niagara System .....	1,760,590	1,714,611	2.7
Eastern Ontario System .....	179,827	180,976	— .6
Georgian Bay System .....	47,131	47,500	— .8
Thunder Bay System .....	117,962	134,209	—12.1
Northern Ontario Properties .....	254,763	272,528	— 6.5
Total of all systems .....	2,360,273	2,349,824	.4

### GALT PAYS OFF AND CELEBRATES

(Continued from page 9)

R. T. Jeffery, chief municipal engineer, H.E.P.C.; ex-Mayor W. S. McKay; and former commissioners E. B. Fewings, George Fisher, A. W. Mercer, J. S. Webster, and W. A. Dixon.

Representatives of the O.M.E.A. included G. A. Edwards, Windsor; F. H. May, St. Marys; W. P. Kress, Waterloo; George Eiffert, Tavistock; Miss K. Ciceri, Secretary-Treasurer of the association; and A. G. Jennings, East York.

Present from neighbouring municipalities were H. J. Graber, Kitchener; F. O. Pelz, Preston; William Henderson, Waterloo; Richard Thomson and George Boucher, Paris; J. R. Brethour, Hespeler; and W. H. Shaw, Ayr.

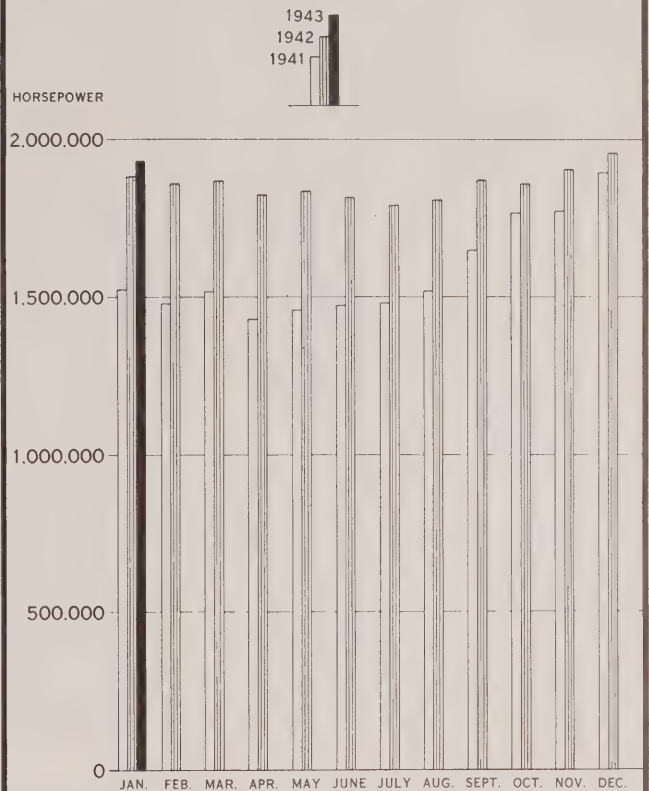
In addition to R. T. Jeffery, H.E.P.C. representatives included G. C. Parker, district engineer, whose municipalities include Galt; J. H. Caster, former engineer for the district; H. D. Rothwell and H. L. Hickey.

Representatives from the various civic bodies in Galt were also present, and members of city council included Mayor R. K. Serviss and aldermen Dr. W. S. McKay, F. C. Marshall, J. H. Brewer, E. E. Foster, Dr. J. N. MacRae, R. F. Skelly, A. W. White, L. G. Lovell, E. M. Griffiths, and the clerk-treasurer, C. T. Chesney.

It will be of general interest to know that a historical booklet, "The Genesis of Electricity in Galt," is in course of preparation by officials of the Galt Public Utilities Commission and is expected to be off the press within the next two or three months.

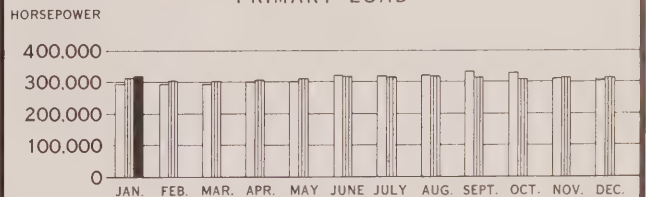
### SOUTHERN ONTARIO SYSTEMS NIAGARA — GEORGIAN BAY — EASTERN ONTARIO

#### PRIMARY LOAD



### NORTHERN ONTARIO PROPERTIES AND THUNDER BAY SYSTEM

#### PRIMARY LOAD



#### PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	JAN. 1943	JAN. 1942	
NIAGARA SYSTEM .....	1,701,743	1,654,558	+ 2.9
GEORGIAN BAY SYSTEM .....	47,131	47,500	— 0.8
EASTERN ONTARIO SYSTEM .....	179,827	180,976	— 0.6
THUNDER BAY SYSTEM .....	106,702	107,480	— 0.7
NORTHERN ONTARIO PROPERTIES .....	213,208	206,576	+ 3.2
TOTAL .....	2,248,611	2,197,090	+ 2.3

# MUNICIPAL LOADS, JANUARY, 1943

## NIAGARA SYSTEM (25-Cycle)

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Acton	1,515	1,903	Etobicoke Twp.	7,108	V.A.	Petrolia	974	2,768
Agincourt	204	P.V.	Exeter	532	1,654	Plattsville	133	P.V.
Ailsa Craig	115	487	Fergus	1,209	2,759	Point Edward	1,700	1,199
Alvinston	100	649	Fonthill	162	860	Port Colborne	2,276	6,928
Amherstburg	742	2,704	Forest	474	1,562	Port Credit	862	1,934
Ancaster Twp.	354	V.A.	Forest Hill	7,085	12,172	Port Dalhousie	905	1,599
Arkona	51	403	Galt	11,552	15,126	Port Dover	378	1,790
Aurora	1,234	2,821	Georgetown	1,517	2,452	Port Rowan	93	700
Aylmer	741	1,985	Glencoe	179	763	Port Stanley	274	824
Ayr	165	760	Goderich	1,404	4,674	Preston	4,226	6,656
Baden	482	P.V.	Granton	49	P.V.	Princeton	119	P.V.
Beachville	738	P.V.	Grimsby	742	1,988	Queenston	94	P.V.
Beamsville	360	1,227	Guelph	11,278	23,074	Richmond Hill	452	1,295
Belle River	178	836	Hagersville	537	1,524	Ridgetown	523	1,986
Blenheim	468	1,873	Harriston	401	1,292	Riverside	974	5,235
Blyth	96	662	Harrow	438	1,092	Rockwood	98	P.V.
Bolton	178	629	Hensall	187	686	Rodney	133	758
Bothwell	119	683	Hespeler	2,851	2,938	St. Clair Beach	59	138
Brampton	2,429	5,975	Highgate	90	322	St. George	133	P.V.
Brantford	21,605	31,622	Humberstone	566	2,831	St. Jacobs	308	P.V.
Brantford Twp.	998	V.A.	Ingersoll	3,055	5,757	St. Marys	1,363	4,009
Bridgeport	135	P.V.	Jarvis	204	513	St. Thomas	7,474	17,045
Brigden	76	P.V.	Kingsville	598	2,453	Sarnia	10,190	18,599
Brussels	123	784	Kitchener	25,227	35,456	Scarborough Twp.	4,386	V.A.
Burford	214	P.V.	Lambeth	114	P.V.	Seaforth	728	1,782
Burgessville	46	P.V.	LaSalle	211	907	Simcoe	2,392	6,340
Burlington	1,623	3,925	Leamington	1,456	6,048	Smithville	169	P.V.
Burlington Beach	366	1,474	Listowel	1,328	2,984	Springfield	63	382
Caledonia	333	1,430	London	39,261	77,105	Stamford Twp.	2,541	8,275
Campbellville	39	P.V.	London Twp.	558	V.A.	Stoney Creek	222	933
Cayuga	117	700	Long Branch	1,265	4,258	Stouffville	236	1,198
Chatham	6,159	17,184	Lucan	165	643	Stratford	6,316	17,163
Chippawa	331	1,228	Lynden	94	P.V.	Strathroy	1,388	2,834
Clifford	85	491	Markham	284	1,175	Streetsville	242	701
Clinton	584	1,879	Merlin	97	P.V.	Sutton	156	949
Comber	123	P.V.	Merritton	10,066	2,916	Swansea	3,020	6,907
Cottam	80	P.V.	Milton	1,419	1,915	Tavistock	575	1,080
Courtright	46	355	Milverton	373	994	Tecumseh	315	2,331
Dashwood	93	P.V.	Mimico	2,433	7,987	Thamesford	174	P.V.
Delaware	62	P.V.	Mitchell	629	1,670	Thamesville	193	816
Delhi	565	2,430	Moorefield	45	P.V.	Thedford	94	598
Dorchester	111	P.V.	Mount Brydges	92	P.V.	Thorndale	63	P.V.
Drayton	108	528	Newbury	30	288	Thorold	2,453	5,284
Dresden	412	1,525	New Hamburg	525	1,441	Tilbury	1,358	1,923
Drumbo	83	P.V.	Newmarket	1,472	3,800	Tillsonburg	1,246	4,602
Dublin	45	P.V.	New Toronto	11,234	9,469	Toronto	348,408	657,612
Dundas	3,101	5,245	Niagara Falls	10,000	20,371	Toronto Twp.	2,596	V.A.
Dunnville	1,251	3,916	Niagara-on-the-Lake	682	1,764	Wallaceburg	3,711	4,802
Dutton	244	830	North York Twp.	9,797	V.A.	Wardsville	35	221
East York Twp.	8,004	41,578	Norwich	383	1,301	Waterdown	201	867
Elmira	1,079	2,069	Oil Springs	211	541	Waterford	482	1,294
Elora	414	1,185	Otterville	83	P.V.	Waterloo	5,404	8,968
Embro	127	420	Palmerston	568	1,400	Watford	362	1,023
Erieau	67	281	Paris	1,944	4,604	Welland	11,907	14,899
Erie Beach	7	21	Parkhill	166	1,029	Wellesley	102	P.V.
Essex	526	1,886				West Lorne	217	768
						Weston	4,628	6,165



# MUNICIPAL LOADS, JANUARY, 1943

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Wheatley -----	176	761	Paisley -----	108	730	Lakefield -----	317	1,301
Windsor -----	50,189	104,415	Penetanguishene -----	1,004	4,177	Lanark -----	68	686
Woodbridge -----	614	946	Port Carling -----	115	520	Lancaster -----	11	570
Woodstock -----	8,361	12,339	Port Elgin -----	362	1,415	Lindsay -----	3,977	8,345
Wyoming -----	67	538	Port McNicoll -----	87	950	Madoc -----	184	1,130
York Twp. -----	20,307	77,175	Port Perry -----	200	1,175	Marmora -----	122	1,004
Zurich -----	97	P.V.	Priceville -----	10	P.V.	Martintown -----	19	P.V.
(25 and 66-2/3 Cycle)			Ripley -----	112	420	Maxville -----	26	811
Hamilton -----	160,027	164,719	Rosseau -----	28	305	Millbrook -----	76	749
St. Catharines -----	30,095	32,559	Shelburne -----	225	1,053	Morrisburg -----	226	1,484
Trafalgar Twp. -----	517	V.A.	Southampton -----	507	1,467	Napanee -----	1,079	3,241
(66-2/3 Cycle)			Stayner -----	217	1,106	Newcastle -----	187	701
Bronte -----	167	P.V.	Sunderland -----	79	P.V.	Norwood -----	139	710
Oakville -----	1,000	3,869	Tara -----	81	510	Omemee -----	171	630
GEORGIAN BAY SYSTEM			Teeswater -----	108	873	Orono -----	94	P.V.
(60-Cycle)			Thornton -----	30	P.V.	Oshawa -----	17,296	26,610
Alliston -----	387	1,700	Tottenham -----	85	532	Ottawa -----	35,152	150,861
Arthur -----	133	1,089	Uxbridge -----	264	1,480	Perth -----	1,619	4,197
Bala -----	76	355	Victoria Harbour -----	62	979	Peterborough -----	11,745	24,977
Barrie -----	3,522	9,559	Walkerton -----	874	2,534	Pictou -----	1,009	3,400
Beaverton -----	178	941	Waubauskene -----	71	P.V.	Port Hope -----	2,343	4,997
Beeton -----	121	617	Warton -----	232	1,750	Prescott -----	1,114	3,283
Bradford -----	184	1,041	Windermere -----	28	117	Richmond -----	61	428
Brechin -----	40	P.V.	Wingham -----	586	2,149	Russell -----	8	P.V.
Cannington -----	151	761	Woodville -----	67	439	Smiths Falls -----	2,598	7,741
Chatsworth -----	65	333	EASTERN ONTARIO SYSTEM			Stirling -----	245	947
Chesley -----	507	1,812	(60-Cycle)			Trenton -----	4,567	8,183
Coldwater -----	114	545	Alexandria -----	71	1,976	Tweed -----	204	1,181
Collingwood -----	2,374	6,249	Apple Hill -----	15	P.V.	Warkworth -----	60	P.V.
Cookstown -----	76	P.V.	Arnprior -----	1,211	4,019	Wellington -----	178	948
Creemore -----	119	661	Athens -----	111	626	Westport -----	86	725
Dundalk -----	235	686	Bath -----	31	325	Whitby -----	1,300	4,236
Durham -----	358	1,874	Belleville -----	6,917	15,498	Williamsburg -----	93	P.V.
Elmvale -----	159	P.V.	Bloomfield -----	86	636	Winchester -----	194	1,017
Elmwood -----	52	P.V.	Bowmanville -----	2,685	3,850	THUNDER BAY SYSTEM		
Flesherton -----	58	452	Brighton -----	338	1,462	(60-Cycle)		
Grand Valley -----	105	645	Brockville -----	4,202	10,576	Fort William -----	16,653	30,370
Gravenhurst -----	1,112	2,261	Cardinal -----	202	1,602	Nipigon Twp. -----	222	V.A.
Hanover -----	1,333	3,190	Carleton Place -----	1,662	4,143	Port Arthur -----	20,477	24,217
Holstein -----	16	P.V.	Chesterville -----	179	1,094	NORTHERN ONTARIO		
Huntsville -----	1,115	2,943	Cobden -----	90	643	PROPERTIES		
Kincardine -----	690	2,483	Cobourg -----	2,090	5,907	Nipissing District		
Kirkfield -----	24	P.V.	Colborne -----	177	960	(60-Cycle)		
Lucknow -----	311	856	Deseronto -----	161	1,002	North Bay -----	4,363	16,013
Markdale -----	165	776	Finch -----	67	396	Patricia District		
Meaford -----	609	2,759	Frankford -----	130	1,095	(60-Cycle)		
Midland -----	3,736	6,764	Hastings -----	97	823	Sioux Lookout -----	306	1,967
Mildmay -----	116	764	Havelock -----	146	1,103	Sudbury District		
Mount Forest -----	449	1,936	Iroquois -----	202	1,123	(60-Cycle)		
Neustadt -----	47	431	Kemptville -----	319	1,230	Capreol -----	223	1,660
Orangeville -----	670	2,558	Kingston -----	12,605	29,545	Sudbury -----	9,258	32,731
Owen Sound -----	5,107	13,559						



LET THERE BE NO ...  
*Forgotten Men*

**The RED CROSS is  
 a link between  
 him and home!**

● Just imagine what it would be like if there were no Red Cross. In times of war there would be no way of knowing what had happened to men missing in battle . . . no way of telling men in enemy prison camps that they were remembered by loved ones at home.

So that there will be no "forgotten men" among Canadians captured by the enemy, the Canadian Red Cross ships thousands of parcels overseas every week. Each parcel contains nourishing food and tasty comforts needed by men to whom the barest necessities have become luxuries. These messengers from "home" relieve the loneliness, the confinement, the monotony of prison camp routine. Each parcel costs \$2.50 . . . more than ever are needed this year. How many will you send?

**ELECTRICITY  
 IS A  
 WAR WEAPON**

*Save it*

THE CANADIAN RED CROSS  
 NEEDS \$10,000,000 FOR 1943  
 OPEN YOUR PURSE...

*Give Generously* **NOW!**

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO





# HYDRO *News*

BACKING THE ATTACK

**VOL. 30**

**APRIL, 1943**

**NUMBER 4**





**TO BUILD MORE SHIPS HERE**

**ELECTRICITY  
IS A  
WAR  
WEAPON**

***Save it!***

● Submarines, ranging the high seas in skulking wolf-packs, threaten the lives of our armed forces and hamper vital shipments of food and munitions to the world's battle fronts. To meet this menace, more ships, of every kind, must be built . . . fast. Through every step, ship construction is largely dependent on electricity. You can help build more ships by saving power wherever and whenever possible.

Lights left "on" needlessly, use power urgently required by our war industries. During wartime, no matter where you live or work, make it a rule to save electricity at every opportunity. Turn "off" all switches where it is being used unnecessarily.

Because of Hydro's low, graduated rates . . . your wartime savings of electricity may not be correspondingly reflected in your cost. But, combined with those of thousands of others, your savings, in electrical energy units, release a tremendous flow of power . . . that makes a direct contribution to the war effort. Electricity is a war weapon . . . save it!

Through the trials and sacrifices of today we can help to bring a new and better life from the chaos that now engulfs the world. Research is developing many uses for electricity which will contribute to better living when peace is won. Help speed the day of Victory . . . use electricity sparingly!

**THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO**





formerly *The* BULLETIN

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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•  
The Front Cover



Coinciding with the launch-  
ing of Canada's Fourth Vic-  
tory Loan Campaign, this  
month's front cover illus-  
tration, showing a British war-  
ship on patrol in the At-  
lantic, bears the appropriate  
title "Backing The Attack."  
The work of the Royal Navy  
and the Royal Canadian  
Navy in convoying troops  
and equipment through sub-  
infested waters has won the  
admiration of all free people.

Volume 30

April 1943

Number 4

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When boy meets girl at a transformer, it may not be the most romantic rendezvous but at least there's something interesting to talk about if the lady should be shy. Take for example this illustration. Here, Grace Barker of Belleville is getting some inside information from her class mate, Ross Empey.





## A GOOD AUGURY

**O**N the sturdy shoulders of today's children will rest the burden of tomorrow's world. If that world is to be happier than the strife-ridden universe in which we live today, it must be governed by the righteous dictates of tolerance, goodwill and understanding—the cardinal elements of good citizenship. A heartening note, and one that augurs well for the security of the world we shall pass on to others, is the liberal interest being taken by our children in today's rapidly changing scene of events.

An example worthy of attention and emulation is the programme of citizenship training in the schools of Belleville, Ontario, where, in addition to the prescribed academic subjects, the students receive a study course on "Hydro" and the rôle it plays in modern living. In 1939 the Belleville Public Utilities Commission, by arrangement with the city's educational authorities, introduced the course on an experimental basis. Its immediate success and popularity were beyond question, and the city's children have acquired a first-hand knowledge of Ontario's great public ownership enterprise. In the current issue of Hydro News, this unique educational feature is portrayed in "Hydro Goes to School."

## TEAMWORK

**Y**OU don't have to read this piece. For that matter you don't have to read anything unless you are so inclined. After all this is still a democracy.

But it's possible you may wish to read on for this is about democracy . . . our Canada . . . and the things for which Canadians are fighting and dying.

Hydro employees, in common with all responsible Canadian citizens, are deeply concerned about these matters. They are united in their determination that every effort must be made to bring about the unconditional surrender of the Axis powers. But determination must be expressed in action on both the home front and the battle front. It's really a question of teamwork. The boys "over there" can't do their part if we "over here" fail to do our part. This is a fundamental and very elementary fact which is fully appreciated by the great majority of intelligent Canadians. You can't whip the enemy's tanks, guns, planes and U-boats with bare knuckles, cour-

age, dirty looks and strong language alone. It takes all that plus weapons which are greater in number and superior in quality to those of the enemy. And that is where we on the home front come in.

Still want to read on? All right, here are a few facts which should be uppermost in the mind of every Canadian at this time. This is not a bow-and-arrow war. It's a mechanized war—total war—which demands all types of vehicles, equipment and ammunition and highly specialized training for our fighting men. And all that takes money—astronomical sums. This year the flow of equipment and men to the battle fronts must become an overwhelming flood. At any time now, the attack on the continent may come and the folk on the home front must back it to the limit of their resources.

Canada's record of achievement in the three previous Victory Loans has been a proud one. This time, the objective is one billion, one hundred million dollars. An all-out effort is required. By making this effort we shall not only help hasten victory now, but we shall be securing the best gilt-edged investment available—an investment in Canada at 3 per cent interest.

By over-subscribing the Fourth Victory Loan, Canada can deliver a smashing blow at the Axis.

Having read this piece to the end . . . well, this is still a democracy in which everyone has an individual responsibility. No more need be said except that the time has come to show that we are worthy of that responsibility.

## A LINK WITH THE PAST

**F**OR most of us historical sites, documents and relics hold a fascination which cannot be easily defined. They bridge the gap of time, carrying us back from our modern world and the achievements of the present to the great epochs of earlier days.

In this issue of Hydro News the story entitled "When The Lights Went On" discusses one of these epochs and draws attention to an old hand-made generator which was placed in service in 1883 when Canada's first industrial electric-lighting plant went into operation at Cornwall. This generator, which is recognized as a valued museum piece, came into the possession of the H.E.P.C. through the efforts of W. P. Dobson, chief testing engineer.

# When The Lights Went On

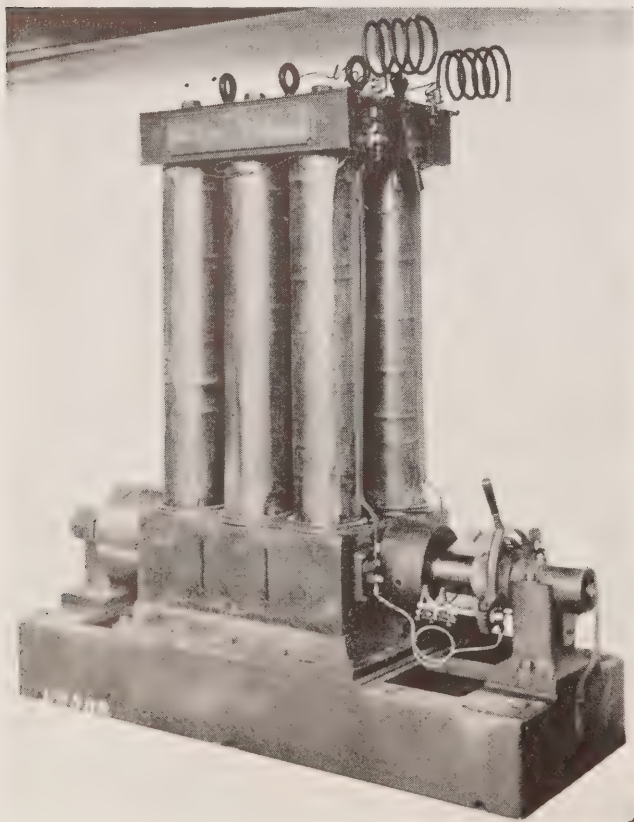
Generator Used In Canada's First Industrial Lighting Plant Is Acquired By H.E.P.C. As Museum Piece—  
Installed At Cornwall, Ontario, In 1883 By Thomas A. Edison—History-Making Event Recalled

By Herbert L. Hickey

A HIGHLY prized possession of The Hydro-Electric Power Commission of Ontario is an old hand-made generator that first saw service in the year 1883, when Canada's first industrial electric-lighting plant went into operation. The old unit, which is temporarily stored at the Toronto Power Company plant at Niagara Falls, was constructed and installed by Thomas A. Edison in the mill of the Canadian Cottons Limited, Cornwall, Ontario.

## In Use for Fifty Years

Recognized as a museum piece of great historical value, the generator is one of six units that formed the mill's original generating plant. Of the remaining five, four were scrapped for their copper content, and one is on display in the Dufferin Street Lamp Works of the Canadian General Electric Company, Toronto. In addition to the old generator, the Commission also acquired the original switchboard,



This old generator, one of six units used in Canada's first industrial lighting plant at Cornwall in 1883, has been acquired by the H.E.P.C. as a museum piece. Only one other unit of the original six is still in existence, being in possession of the Canadian General Electric Company.

a number of wooden fuses, and other miscellaneous pieces of equipment.

W. P. Dobson, chief testing engineer of the H.E.P.C., acted on behalf of the Commission in obtaining this old equipment. On a special visit to Cornwall for this purpose a number of years ago, Mr. Dobson observed that some of the wiring originally used was still in place after 50 years. He states that in return for the old switchboard, which remained in active use until 1931, the Commission agreed to install modern equipment to serve the Canadian Cottons plant. The generator served for many years after its installation, but it, too, was abandoned in favour of a more up-to-date unit.

"I sincerely hope that some day we will have a museum in the Commission for this and other old equipment which we have received from various parts of Canada," Mr. Dobson added.

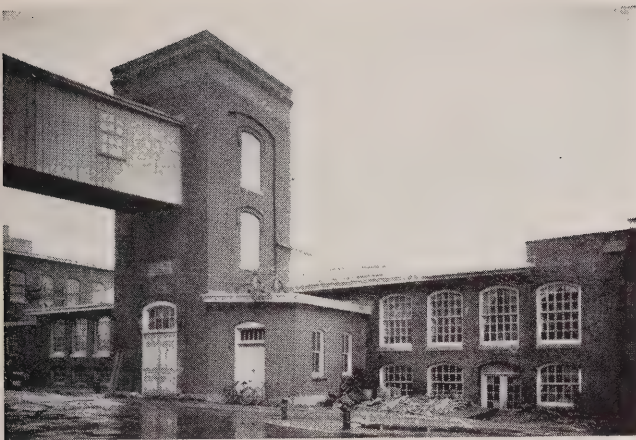
Photographs accompanying this article show sections of the weave room of the Canadian Cottons Limited mill, where the pioneer installation was made, and an exterior view of the company's building. The old generator and switchboard, which are also pictured, offer interesting comparisons with equipment in use today.

Many stories have been told of the life of Thomas Edison—of his travels, his experiments, his pioneer installations—



While this old switchboard would not meet modern standards, it served the purposes of the Canadian Cottons Limited for many years. Used in Canada's first industrial lighting plant, it was still in service in 1931. It is constructed of wood, with switches on porcelain blocks mounted on its face. This historic switchboard is now in the possession of the H.E.P.C.





Exterior view of Canadian Cottons Limited, Cornwall, Ontario.

but perhaps all too little has been told of the days when he visited Cornwall in 1883 to install that first industrial electric lighting system.

Within a comparatively short time after he had obtained a patent for a carbon filament electric lamp in 1879, Edison was approached by officials of Canadian Cottons Limited regarding a proposed scheme of lighting for their mill. Although the officials professed to be somewhat dubious in their own minds about the soundness of the idea, they thought it might carry at least a certain advertising value. Edison, however, was confident and accepted the opportunity of demonstrating the commercial value of his carbon filament lamp. A year later, negotiations were closed and he was given authority to go ahead with the installation of a generating unit in the company's weave shed.

#### Canada's First "Wiremen"

When Edison arrived in Cornwall he was confronted with many obstacles. At that time electricians were comparatively unknown and there were no supply houses where he could obtain apparatus, but he set to work, and for more than a year was busily engaged in building six generating units and improvising equipment. Upon completion, the generators were set up in the weave shed of the Canadian Cottons plant. H. M. Byllsby, business head and Canadian representative for Thomas Edison, was given the contract to install electric light globes in the building, and in 1883

John Marshall and Ed Murray, the first "wiremen" in Canada, came to Cornwall to make the installation and pave the way for the great event.

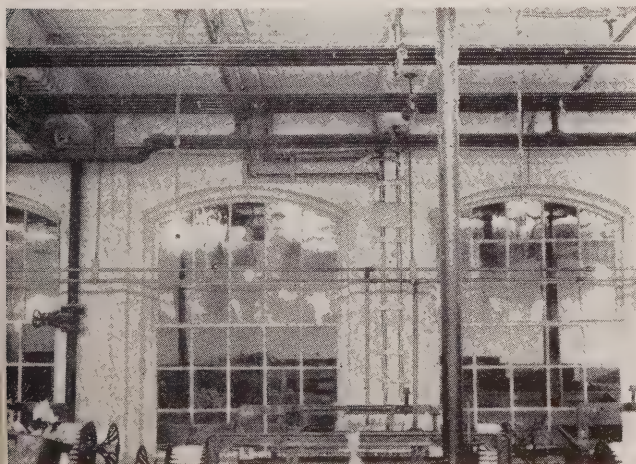
During their stay in Cornwall, Marshall and Murray boarded at the home of Reuben Hitchcock, and through that association Mr. Hitchcock himself was thrown into close contact with Edison and other pioneers of the electrical field. It will be of particular interest to H.E.P.C. employees to know that Mr. Hitchcock was the father of M. J. Hitchcock, the Commission's district electrical inspector at Brockville at the present time, who recalls the event in these words:

"I was fortunate enough to be present with my father and see Mr. Edison start the first electrical generator installed in Canada. Although but a lad of eight years, I remember the incident very clearly, as I consider the impression made on my mind that night created in me an interest in everything pertaining to electricity that has never left me during all the years that have intervened."

The imagination of the elder Mr. Hitchcock was so captured by the romance of the Edison experiment that he finally joined his new companions, Marshall and Murray, and worked on the installation at the Canadian Cottons mill. In later years he was actively associated with Edison's business enterprises. Three others, John McMillan, John Grimes and Jim Fuller, all of Cornwall, also took part in hastening the advent of commercial lighting in Canada. To these six men who worked with Edison goes the honour of being the first Canadian electricians.

It was in early spring when Murray, Marshall and the four Cornwall men, with the help of carpenters and mill workers, began to hang several hundred globes from the ceiling of the weave shed. The globes were of 16-candle-power capacity, with filaments made from charred shreds of bamboo fibre. From the ceiling the wire ran through the gas piping and down to the bulbs. The lamps were of the screw-contact type and fitted into the socket in the same general way as lamps today. The lead-in wires to the filament were of platinum. (In later years Mr. Hitchcock, Sr., recalled that it used to be a lucrative hobby to collect burned-out globes and sell the platinum). Power flowed into the lamps from the six dynamos of the power plant which, in turn, were connected to the main shaft of the steam engine at the mill.

*(Continued on page 21)*



These illustrations (left and above) show interior views of the weave-room at the mill of Canadian Cottons Limited, Cornwall, where Thomas A. Edison installed the first industrial lighting system in Canada in 1883.



## The Name of Belleville Is Linked With The Visit of Lady Gore

Events Of Historical Interest Recalled By  
Oswald H. Scott, Manager Of The  
Public Utilities

**I**F Lady Bella Gore hadn't decided to stay overnight at the tavern, Belleville might not have been on the map. This happened one night in the year 1850 when Her Ladyship was travelling to York, now known as Toronto.

It's possible that the ghost of John Walden Meyers may still be quite irked about the whole business for during his life—in the year 1794 to be exact—Mr. Meyers had built the first brick house in Upper Canada. It seemed then as if Meyers had not only built a house but a monument which would perpetuate his memory down through the centuries for the place in which it was erected was named Meyers Creek in his honour.

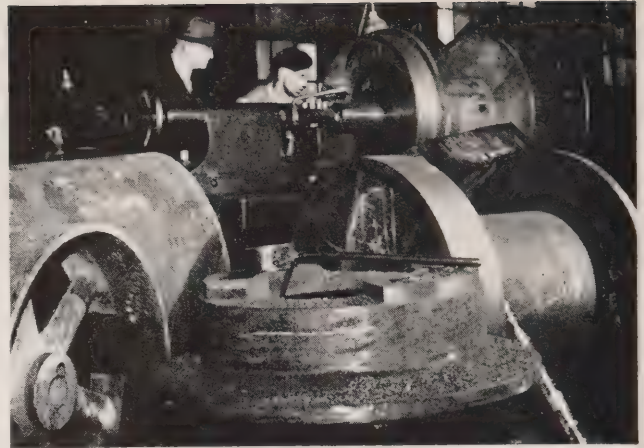
### Stayed at Tavern

But in 1798, the first tavern in Hastings County was erected in Meyers Creek and the stage was nicely set by fate for what was to happen fifty-two years later when Lady Bella arrived on the scene and decided to sleep at the tavern. The folk of Meyers Creek felt that something should be done to commemorate such an auspicious event and so they changed the name of the place. They called it Belleville in honour of the charming Lady Bella.

That's all past history now and a great change has taken place in Belleville since that time. If Lady Bella had arrived on the scene about 60 years later she would have been able to switch on and off the light in her



This is the building occupied by the Belleville Public Utilities Commission. It is located at 277 Front street.



This is a camera impression of a scene in one Belleville war plant. room at the tavern.

During the first decade of the present century, Belleville purchased electricity from the Trenton Electric Water Power Company which was taken over by the Electric Power Company. Early records also show that the latter company was taken over by the H.E.P.C. in 1916 and that Belleville signed a cost contract with Hydro in April, 1929, taking over the operation of its own system at that time and appointing a commission. By 1935, all debt charges had been cleared off and the people of Belleville owned their Hydro system.

These are among many interesting facts recounted to Hydro News by Oswald H. Scott who has been manager of the utilities at Belleville for thirty years. M. P. Duff, chairman of the commission and George A. Reid, commissioner, both have ten years of public service to their credit and are still going strong. The other member of the commission is mayor Harry Rollins.

When the Belleville Hydro-Electric System took over the operation of Hydro the load was 3,650 horsepower and today it is 7,000 horsepower, Mr. Scott stated. At present there are 3,723 domestic, 643 commercial and 102 industrial consumers who are receiving electric service from the Belleville Public Utilities.

Since 1939 the population has increased from 14,678 to 16,500 and there is a decided housing shortage in the city due to the expansion of war industries and to the fact that there has been an influx of families of airmen

*(Continued on page 21)*



These Belleville war workers are engaged in building parts for ships.



# What Is Victory Worth To You?

By A. W. MANBY, Chairman,  
H.E.P.C. Victory Loan Committee

**I**F someone approached you and inquired, "What are you willing to pay to bring the world back to peace," what would you say?

Or if someone asked, "Can you stand up to our boys overseas and tell them honestly that you are doing everything possible to help them?" would your answer be "yes?"

A. W. MANBY  
chairman of the  
H.E.P.C. Victory  
Loan Committee.  
Other members of  
the committee are J.  
J. Jeffery, Otto Hol-  
den and M. J. Mc-  
Henry.



If you can say, in all sincerity, that you have done your utmost to pave the way for victory; that you have put forth every bit of energy and every bit of cash you can spare; that you have completely exhausted your resources and have thrown your full weight behind the war effort, patriotically and unreservedly—then you are an example for all Canadians to follow! But how many of us can that? How many of us have reached the limit in the number of sacrifices we can make?

We must be honest with ourselves. Most of us know in our hearts that we haven't yet done all we could. Yes, we'd like to do more, and we intend to do more . . . some time. But just at the moment we feel we've done about all we can. Procrastination may be not only the thief of time, but the thief of victory!

## Faced With a Ringing Challenge

Canada's Fourth Victory Loan is now in full swing. It is, beyond all doubt, the most important Loan ever undertaken in this country. The objective staggers us with its very immensity—one billion, one hundred million dollars! But this represents only one-fifth of Canada's expenditure in the total fiscal year. We must come through this time, as never before. Loyal Canadians are faced with a ringing challenge. Are we willing to pay this small price for victory?

So far in this war, Canadians have done wonders. Our soldiers have demonstrated, beyond every shadow of a doubt, that they are dauntless fighters, ready to give everything to save democracy. Our war factories and production lines have made a gigantic effort. Our three previous Victory Loans have been over-subscribed. On every hand, Canada has shown herself to be in deadly earnest. But this time, it's going to take just a little more "push" to put the Victory Loan over the top. We're being asked to take stock of our personal resources, to see just how much extra we can spare. This is an important year. The

leaders of the United Nations have reiterated time and again that great things may be expected during 1943. The turn of events on our many battlefronts leaves no doubt about it.

## Buying a Share in Victory

Canada's population, in the neighbourhood of 11,500,000, is being asked to lend one billion, one hundred million dollars. Apart from the large subscriptions from institutions, it is estimated that 2,000,000 individual Canadian subscribers must do their part if this Loan is to reach its objective. Let us show the Axis nations that we're in this struggle with everything we have!

A Victory Bond is the most attractive offer ever made to any Canadian investor. The whole Dominion of Canada stands behind every bond we purchase. We can't have faith in Canada unless we have faith in ourselves. If we let Canada down, we also let ourselves down, and we tell the world we are not interested in winning this war. But Canadians are not like that. They have indicated before, and they will indicate again, that they want victory at any price. Buying a bond now is buying a share in victory.

To the average Canadian, interested in his home, his family, his friends, and his country, a Victory Bond purchase is not a sacrifice. It is a privilege. Setting aside a few dollars now to buy a Victory Bond is one of the most intelligent things we can do. We give nothing and yet we receive so much in return.

## Just a Little More Effort

When you buy a bond, you help yourself and Canada at the same time. You lend your money, at a good rate of interest, to forge the weapons of victory, to make sure that your boy "over there" will have the equipment to defend himself and you.

You help to put your fellow-men to work at essential war jobs.

You are making it possible for yourself to buy more goods in post-war times, when greater quantities and finer quality are available.

You are building up a little reserve fund to tide you



## SYMBOL OF FREEDOM

This shield has been designed to symbolize Canada's Fourth Victory Loan Campaign. The Roman numerals, in addition to signifying the "Fourth" Victory Loan, also represent the "Four Freedoms" — freedom from want and fear; freedom of speech and religion. The first numeral, read vertically, portrays three dots and a dash, in the Morse code, while the "V" also represents victory.

over in the event of unexpected expenses.

You are helping to fight the ogre of inflation, which, if allowed to go unchecked, will bring us to economic ruin.

You are, in addition, giving yourself a bonus of 3 per cent annually for postponing your spending until the war is won.

What other securities offer as much return for so little effort.

Hydro employees have reason to be proud of their part in past Victory Bond and war savings campaigns. They have rallied in a magnificent manner on each occasion. This time they are asked to do it again, with just a little more effort. Hundreds of Hydro employees are now in the armed forces, located in many distant parts of the world. Let us show them that we are standing behind them every step of the way.

It has been said that the only people in Canada who have made sacrifices so far in this war are the boys who have gone overseas, and those who kissed them good-bye at the station. That is not far from the truth. The theme of the Fourth Victory Loan is "Back the Attack!" Let us back it to the limit of our resources. If we put our hearts and minds to it, we can and will!

Every Hydro employee will wish to get into this fight now. Let us help put the Fourth Victory Loan "over the top."

## MILITARY DISPLAY AND FILM LAUNCH VICTORY LOAN DRIVE

A demonstration given by the Royal Canadian Signal Corps under the direction of Major E. W. Stenhouse on the back lawn of the H.E.P.C. Administration Building and three showings of the stirring March of Time film, "One Day of War," launched the Commission's drive in Canada's fourth Victory Loan Campaign.

Included among the equipment used by the Signal Corps were universal carriers, carrying the most modern radio transmitting and receiving equipment, an automatic cable laying truck and a miscellaneous display of signal equipment, including "Walkie-Talkie" sets.

The film, shown in the auditorium, graphically portrayed actual war scenes in Russia, many cameramen having lost their lives in the making of the film.

## HONOUR ROLL IS COMPILED BY DISTRIBUTION SECTION

On the honour roll compiled by the distribution section of the electrical engineering department, H.E.P.C. are the names of twenty-one former employees who are now serving in the R.C.A.F., while one is in the R.C.A. and another in the R.C.E.

The names on this roll are as follows: Bruce G. Servos, William A. Hall, Albert Stringer, John A. Miller, Thomas J. McQuaid, Murray A. Brooks, George T. Storey, William J. Poole, Thomas Dickson, Eric D. Downer, Maxwell H. Howat, Raymond M. Hagerman, John M. Robertson, Howard B. Muckle, Alex. C. Sutherland, Roswell D. Hammond, John O. Stephens, George E. Bisheff, William B. Wilson, Hugh Watson and George A. McGregor, all in the R.C.A.F.; Lawrence Halse in the R.C.A.; and Jack T. Hall in the R.C.E.

## Your Victory Loan Dollar

### HOW MUCH IT'S WORTH

WHEN you buy a Victory Loan bond your money is in the safest investment that Canada has to offer. That is a case-proved fact. Despite the gyrations of many investments that have reeled and soared in rhythm with the swift-changing events of war, the Dominion's war loans have remained solid. There is not a single war loan issue which is not currently selling at or above the price at which it was first offered.

Here is the record:

Issue	Original Current Offering Market		
	Price	Bid	Asked
1st War Loan 3 1/4/52	100	103 1/4	104
2nd War Loan 3/52	98 3/4	100 1/2	101 1/4
1st Vic. Loan 2/46	99	100	100 1/2
1st Vic. Loan 3/51	100	102	102 1/2
2nd Vic. Loan 1 1/2/44	100	100	100 3/8
2nd Vic. Loan 2 1/4/48	100	100	100 1/2
2nd Vic. Loan 3/54	100	100 1/2	101
3rd Vic. Loan 1 1/4/46	100	99 3/4	100 1/4
3rd Vic. Loan 3/56	100	100	100 1/2

Thus the \$100 you put into the First War Loan back in Jan., 1940, has come through the fall of France, the Battle of Britain and all the subsequent world-shaking moves on the war fronts to be now worth \$103.25.

In straight cash value the \$100 investment of Jan., 1940, has mounted to a total of \$112 in principal and interest for in addition to that capital appreciation you have received the full 3 1/4% interest on your investment.

Here is an example of how that interest return can be pyramided. The interest you have received on your \$100 First War Loan has been sufficient to buy two War Savings Certificates at \$4 each. These, in turn, carry interest at 3% which will make this \$8 re-investment worth \$10 at the end of 7 1/2 years.

An important feature of Victory Loans is their liquidity; these bonds ranking next to cash in this respect. Along with the fact that they draw interest at double the bank rate for savings accounts. Victory bonds can be taken to the bank and their full cash value received immediately. Similarly, they are recognized as the best collateral for loans available.—The Financial Post.

## WESTPORT COMMISSIONER PASSES

Casper J. Speagle, aged 78, commissioner of the Westport Hydro-Electric Commission, passed away recently.

Mr. Speagle was reeve of Westport for a number of years and had served on the commission since the time of its inception until his death. He was a contractor by trade and built many churches, schools, public and private buildings throughout the province.



# Around the Hydro Circuit

**M**AYOR HARRY ROLLINS of Belleville, who is also a member of the city's Public Utilities Commission, was born in Ivanhoe, Hastings County, in 1900. After spending his early life in his birthplace, he attended high school in Madoc and the Ontario Business College in Belleville. In 1918 he moved to Tweed. Mr. Rollins joined the Houston Lumber Company in 1924 and came to Belleville with the firm in 1928. At present he is the company's sales manager and treasurer.



Harry Rollins

From 1935 to 1937 Mr. Rollins served on the city's Board of Education and in 1938 he was elected alderman. He held aldermanic office continuously until his election as Mayor of Belleville for 1943.

Deeply interested in Hydro and utility matters, Mr. Rollins brings to the local commission a valuable background of business experience.

His worship is greatly devoted to sports and follows baseball very enthusiastically.

**A** MIGHTY good man to have around is **E. P. SMITH** of the Belleville Public Utilities Commission. For the past 13 years a member of the commission's sales staff, Mr. Smith was born in Foxboro, Ontario, in 1895. He attended the "little red school house" in Sidney Township and received his secondary education at Belleville Collegiate Institute. During the Great War he served for two years with the 73rd Battery, C.F.A.



E. P. Smith

Following a ten-year association with the Walker Hardware Company of Belleville, Mr. Smith joined the Belleville utilities. He has been particularly active in Hydro affairs in that city, and the story of his unique and highly successful system of bringing

"Hydro" to the schools appears elsewhere in this issue.

For 15 years "the Hydro man" (as he is known to the school children of Belleville) has been a Sunday School superintendent, and he has been an ardent bandsman since he was eleven years of age.

Mr. Smith's two main hobbies, music and fishing, must have more in common than "scales," for he finds them the acme of a gentleman's recreation.

**G**EORGE A. REID, a public utilities commissioner in Belleville, was born in Centreville, Addington County, in 1874. Following his education at Reidville, he was

for 20 years engaged in the building trade. Mr. Reid came to Belleville in 1913 and since that time has been on the staff of the Great West Life Insurance Company.



G. A. Reid

A keen interest in municipal affairs saw Mr. Reid in the office of councillor of Sheffield Township for two years, and during 1928 and 1929 he served Belleville as alderman. He was elevated to the mayoralty for 1930 and 1931 and automatically became a member of the city's hydro-electric commission. In 1933 Mr. Reid was elected as commissioner and he served in the office continuously until 1938.

He was re-elected as commissioner in 1941.

A prominent figure in the city's activities, Mr. Reid divides his leisure time between public affairs and a quiet bit of fishing.

**O**SWALD H. SCOTT, general manager of the Belleville Public Utilities Commission, is a native son of Oshawa. Vital statistics show that he was born in 1887, has been in Belleville since 1913, and has had more than 30 years' experience in public utility engineering and administration.



Oswald H. Scott

Upon his graduation from the civil engineering course at McGill University in 1910, as a Bachelor of Science, Mr. Scott was engaged in utility engineering in Portland, Oregon, and Boise, Idaho. In August, 1913, he assumed the managership of the Belleville electric utility which, at that time, was controlled by the Electric Power Company. When the system was purchased by the H.E.P.C. in 1916, Mr. Scott continued as manager.

The plant was taken over by the city in 1929, and in 1937 the Hydro, gas and waterworks departments were united to form the Public Utilities Commission, with Mr. Scott as general manager.

A public-spirited citizen, this industrious official has been director and later president of the Belleville Chamber of Commerce; a member of the Vocational School Board; secretary of the Belleville Rotary Club for nine years, in addition to a year the president's chair; and during 1919 and 1920 was president of the A.M.E.U. He was chairman of the Canadian section, American Waterworks Association, in 1942, and is a member of the Ontario Association of Professional Engineers.

Mr. Scott's many business affairs are counter-balanced by his leisure pursuits of golf and fishing.

## It Takes More Than Taxes to Beat the Axis

# Des Joachims Site Is Well Situated In Relation To Existing Load Centres

**Offers Distinct Economic And Engineering Advantages — Carillon More Attractive From Quebec's Viewpoint — Long Term Value Of Ottawa River Agreement Emphasized  
Each Province Can Now Work Out Detailed Plans For The Future**

THE map on the opposite page, showing the Ottawa river sites allocated to both Ontario and Quebec under the terms of the agreement reached between the two provinces, also focuses attention upon the relative distances of these sites from existing load centres.

In a recent article in Hydro News it was pointed out that Des Joachims would be the first site to be developed by Ontario. The other two sites allocated to this province are Cave & Fourneau and Chenaux (or Portage du Fort) with the right to utilize the upper half of the fall at Paquette in conjunction therewith, while Quebec receives Rocher Fendu and Carillon with the right to utilize the lower half of the fall at Paquette in conjunction therewith.

In undertaking the physical development of the Des Joachims power site on the Ottawa River, Ontario will be converting to its use a power resource that offers distinct economic and engineering advantages.

For a number of years Ontario and Quebec discussed the allocation of power sites on the interprovincial section of this historic river but, because the circumstances of the negotiations required Dominion as well as provincial assent, many complexities arose to forestall a definite agreement. However, within recent months, discussions were brought to a satisfactory conclusion by the introduction of legislation in both provincial Houses designed to promote the development of a number of attractive sites, amicably exchanged by both governments. By virtue of these agreements, and by the undertaking of the Dominion authorities to do whatever is necessary to facilitate the project, each province acquires those sites deemed most adaptable to its particular needs. When the Dominion Government implements its undertaking by legislation, in respect of which notice of resolution has been already given, the way will be open for construction of power sites at the pleasure of each province.

## Can Plan for the Future

Not only does the allocation of the various sites secure for each province an almost equal division of available power, but it gives to Ontario the sites least desired by Quebec and to Quebec those least desired by Ontario. The most important result achieved by the agreement is that in allocating the sites in undivided units it leaves each province free to develop its share of this Ottawa river power as and when it becomes most advantageous to do so. Moreover, each province can plan for the future with assurance that its plans can be carried out on a dependable time schedule.

The agreement, therefore, has particular value from a long-term viewpoint. At the same time, should changing circumstances make it desirable to construct quickly substantial additions to the developed power resources of either province, no time need be lost because each province

can now work out detailed plans for the works required at the sites allotted to it.

From Quebec's point of view, the Carillon site is regarded as the most attractive of all the Ottawa river power sites. It is situated quite close to the point where the Ottawa river ceases to be an interprovincial stream and flows only through Quebec. It is only about 40 miles from the great power markets of the Montreal district; whereas Des Joachims, the only site comparable in size, is 165 air line miles further away. At Carillon, under a head of about 63 feet, an initial development of some 340,000 horsepower can be made.

## Eastern Ontario's Requirements

From the point of view of Eastern Ontario's market for power, the Carillon site is too large an undertaking; moreover, it is some 70 miles further away from the load centre of the Eastern Ontario system than the recently completed Barrett Chute plant and the undeveloped sites on the Madawaska river. At these sites a reserve of 150,000 horsepower is available that can be developed in units more adapted to the rate of growth in this territory. Furthermore, the Chenaux site on the Ottawa, allocated to Ontario, provides, in point of size and location, a site admirably suited to the requirements of Eastern Ontario.

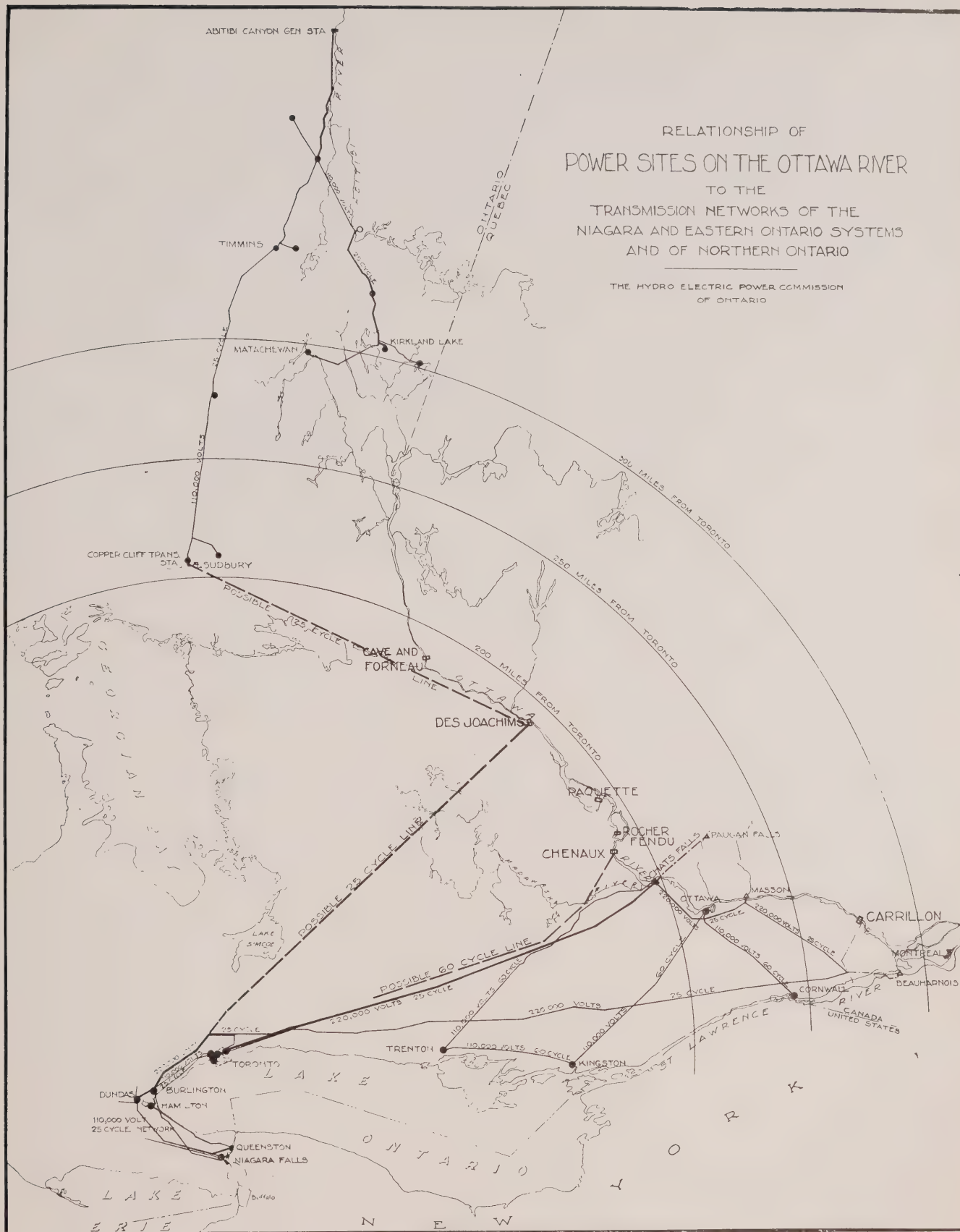
The largest site allocated to Ontario is that at Des Joachims where under a head of 135 feet an initial development of about 300,000 horsepower is practicable, with an ultimate installation of possibly 400,000 horsepower. If reference is made to the accompanying map, it will be seen that when related to the proved economics of long distance transmission of large blocks of power, the sites on the upper Ottawa are advantageously situated with respect to the load centres of south-western Ontario, and that a direct transmission line from Des Joachims' power site to Burlington would be well spaced from the present 220,000-volt lines bringing power from the Gatineau river developments via Chats Falls and from the line further south transmitting Beauharnois power. This spacing of the main transmission lines bringing power from eastern sources to the Niagara industrial area is important because it is unlikely that all three routes would be within a storm area at the same time. Furthermore, interconnection would be feasible with the main transmission lines traversing the Northern Ontario mining areas, and the other sites allocated to Ontario on the upper Ottawa could easily be linked in to the system.

As already pointed out in the last article on the Ottawa river sites, the final agreement reached is one which crystallizes certain power development aspirations of both provinces on a mutually satisfactory basis, related both to their long-term needs and to possible war requirements.



RELATIONSHIP OF  
POWER SITES ON THE OTTAWA RIVER  
TO THE  
TRANSMISSION NETWORKS OF THE  
NIAGARA AND EASTERN ONTARIO SYSTEMS  
AND OF NORTHERN ONTARIO

THE HYDRO ELECTRIC POWER COMMISSION  
OF ONTARIO





Shown above is Queen Victoria School, Belleville. Right: E. P. Smith, "The Hydro Man," conducting a class in the same school while principal A. C. Wilkin and Miss Alexandra Gilmore, the teacher, look on.

The lunch period had been rung and the children were making their way out of the Belleville Collegiate when the photograph (above) was taken.

**B**ELLEVILLE is a place where Hydro is more than a vital twenty-four-hour-a-day public service which is available at the snap of a switch.

In this busy and historic Ontario municipality of 16,500 people, Hydro is an important subject on the curriculum at the public schools and collegiate. Right in their class rooms, children between the ages of 11 and 15, learn about the origin, operations and general functions of Ontario's great public ownership enterprise and they are called upon to answer questions on this subject when the examinations are held.

The "teacher," E. P. Smith of the Public Utilities Commission, is a man who is known to practically everyone in Belleville. His popularity with children and the way in which he "conducts class" have earned an enviable reputation for the "Hydro man" who, in the opinion of teachers, should have been a member of the teaching profession.

#### Voted "Most Profitable" Period

No hickory stick technique is required in Hydro class, for the children are keenly interested. Two of the many indications of this interest are to be found in the high marks obtained by the children in examinations and in the fact that Grade 7 and 8 teachers in one school voted the Hydro periods of instruction as "the most profitable in the year."

To date, more than 2,500 children have received instruction in this subject which is classified as "science."

These are among many interesting facts learned by Hydro News during a recent visit to Belleville where the

# Hydro goes

## Chance Remark Starts Unique Programme Of Education In Schools Of Belleville Where 2,500 Children Have Learned About Hydro In The Past Five Years

close co-operation between the Public Utilities Commission and schools has made possible an important contribution to the general education of the children.

Many of the parents and teachers as well as Oswald H. Scott, manager of the local utilities, believe that this educational programme is unique among the schools of Ontario.

But what is this programme and how did it all start?

To answer these questions it is necessary to go back to the year 1937 when someone remarked to Mr. Scott: "The children of today know very little about Sir Adam Beck and the principles of Hydro."

And that remark really started something.

Seated in his office at the Public Utilities building, Mr. Scott gave the matter considerable thought and came to the conclusion that the only effective way to tell the children about Hydro and the other utilities was to start right in the schools.



### Started in Spring of 1939

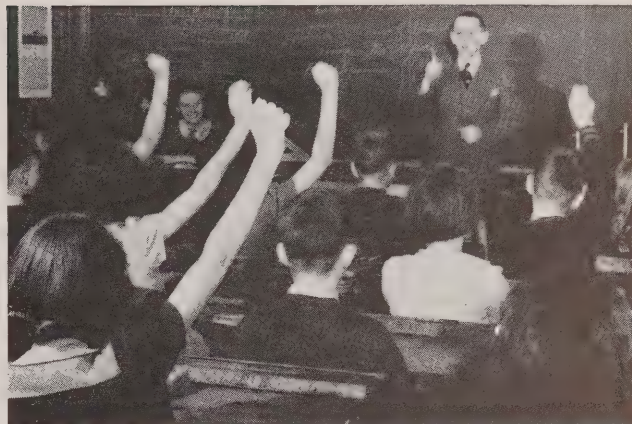
For several months, Mr. Scott explored the possibilities of having this subject taught in the schools and finally it was decided that if the Public Utilities Commission could supply the teacher, the experiment would be tried. And this is where Mr. Smith came into the picture. The latter who, for fifteen years, has held the position of superintendent of Christ Church Anglican Sunday School, which has a membership of 250, appeared to be "the man for the job."

And so in the spring of 1939, Mr. Smith added the job of teaching to his duties. In the first year, the programme was launched in the five public schools—Queen Victoria, Queen Mary, Queen Alexandra, King George and St. Michael's—and in the second year the Collegiate and Vocational School was added to the list. Each year, during the past five years, 500 children have received instruction in Hydro.

This programme of education, in addition to stressing fundamental principles, accentuates the need for conservation in the use of all utility services. An idea of this programme can be formed from the following examination questions which were submitted at the collegiate last year:

#### Examination Questions

1. Who owns the Belleville Utilities?
2. Name the three utilities operated by the Commission.
3. Name the personnel of the Belleville Utilities Commission.

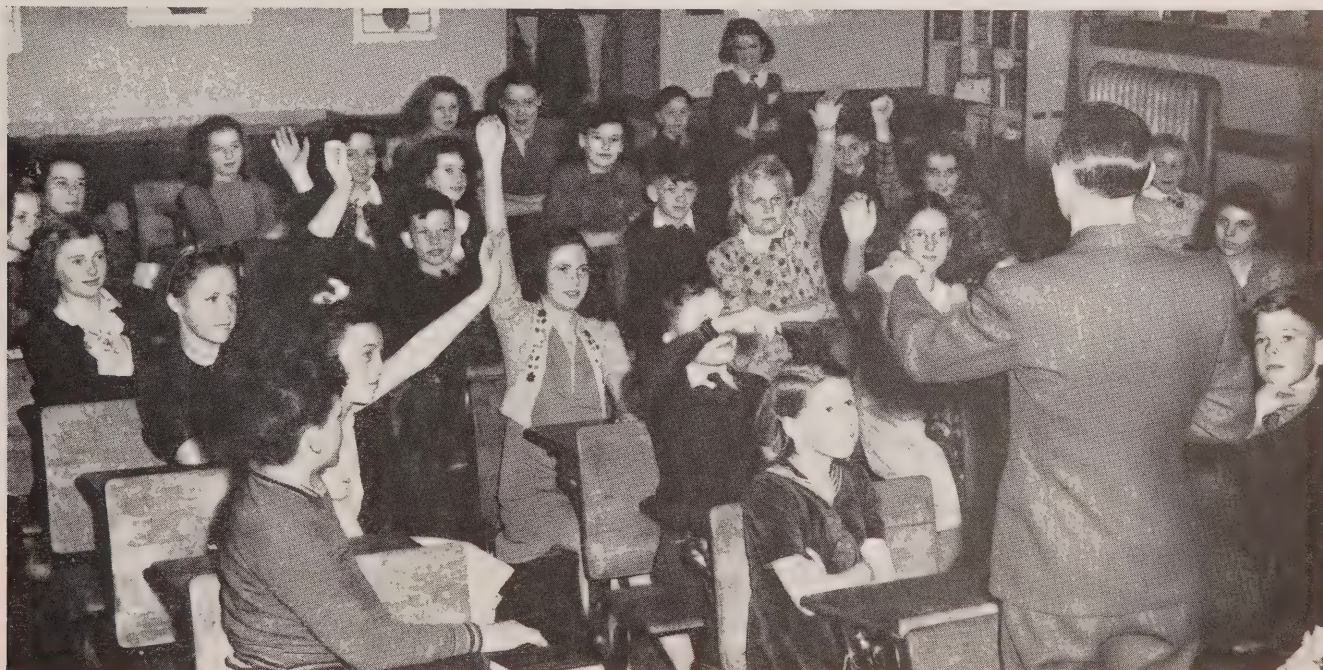


Seated in a class room after a lapse of many years, the Hydro News editor and photographer "listened in" on the Hydro lesson given by E. P. Smith of the Belleville Public Utilities Commission in the Queen Victoria School. When "teacher" wasn't looking, the photographer took the picture shown above.

4. In what way have the profits from electricity been given to the users?
5. Why are the users more likely to waste water than electricity?
6. Name three ways in which water is wasted in most homes.
7. Name the months during which users are allowed to use lawn services.
8. When water is wasted who pays for the waste?

# to school

Interest and enthusiasm ran high during Hydro periods at the Belleville schools. The photographer arrived at the Queen Victoria School while E. P. Smith, "The Hydro Man," was conducting class. The visiting "Teacher" had just asked a question when the camera clicked. Judging by the expressions on many of the children's faces and the upraised hands, they know the answer. Their own teacher, Miss Alexandra Gilmore, smilingly listens to the lessons from the back of the room.







This is a class in the Queen Alexandra School. "The Hydro Man" is shown addressing the children, while, seated at the desk, is principal Gordon Anderson. One of the teachers, George Wallace, stands beside one of the windows.

9. Is filtered water used for lawn services and for fire purposes?
10. From what is cooking gas made in Belleville?
11. Name two by-products which are obtained in the manufacture of gas.
12. How is gas measured?
13. How is electricity measured?
14. What are the rates charged for electricity?
15. What is the rate charged for gas?
16. What voltage of electricity is carried over the power lines in the city?
17. What voltage of electricity is used in our homes?
18. How is voltage changed?
19. What is voltage?
20. Why is the main fuse box sealed in every home?
21. What size and type of fuses are generally used in a 60-ampere main fuse box?
22. Why should we never use too large a fuse or anything except a proper fuse?
23. What is the reading of this meter? (A sketch showing the four meter dials accompanies this question.)
24. The last reading of this meter is 5050 kilowatt-hours. What would the electric account be?

#### Uses Tabletop Exhibit

In addition to using the chalk and blackboard when teaching, Mr. Smith vividly portrays the operation and functions of Hydro by means of a tabletop exhibit which shows a power plant, substation, poles with transmission lines, transformers, street lights, homes and factories. On a wall board behind the table are a switch, fuse box, meter

and other equipment. The realism of this exhibit is accentuated by the use of miniature bulbs which illuminate the "streets", "homes" and "factories" when the switch is pulled by a youthful "operator." In this way, the children form a general idea of what happens from the time electricity is generated until it is actually available at the touch of the switch.

W. S. Turner, the tall, popular principal of the Belleville Collegiate, told Hydro News it was important that this subject should be taught by a "Hydro man" whose

E. P. Smith "The Hydro Man," (centre) with W. S. Turner, the principal on his left and J. N. Reid, one of the teachers, is shown here addressing a class at the Belleville Collegiate.







Belleville school children have also received instruction in resuscitation from "The Hydro Man." These are girls of Class 10-B at the Collegiate in action. In the group are: back row, from left to right, Patricia Hagarman, Shirley Marinoff, Shirley Bunnnett, Lois Flindall, Margaret Haggis, Mary Lock and Mary Sisler; second row, Mary Doyle, Carolyn Morden, Ruth Blatherwick, Ruth Kellar, Claire Davison, physical director; E. P. Smith, "The Hydro Man;" Grace Firth, Marilyn Donovan and Iona Carter: kneeling, W. S. Turner, principal; Phyllis Trusdale, Ruth Longwell, Fay Campbell, Charlotte Finkle; lying on mats: Margaret Williams and Edna Kolver.

presence in a class room made the instruction "more definite." School teachers, he explained, had neither the time nor the equipment for doing this work. "And," he continued, "you will probably find a more intelligent understanding on the part of the students. When these students become householders they will have a more comprehensive understanding of public utilities." Mr. Turner

This group of kiddies received some first-hand information at the substation where E. P. Smith (left) and operator Tom Helm explain what happens when a switch is pulled.



said that surprisingly few adults could read their own meters, compute their own electric bills or understood the operation of utilities.

Similar sentiments were expressed by Gordon Anderson, principal of the Queen Alexandra School, and A. C. Wilkin, principal of the Queen Victoria School.

While the day's itinerary at Belleville enabled Hydro News to visit only two of the public schools and the collegiate, the impressions formed and the information obtained were sufficient to reveal the educational value of this work and the success which is being achieved.

### Amusing Incidents Recounted

At the Queen Victoria School, Hydro News took a seat in the class room along with the children while Mr. Smith gave a lesson on Hydro and other utility services. Presented in a chatty, informal style and enlivened by humorous analogies, the lesson held the attention and interest of the pupils from start to finish.

From time to time during the past five years a number of amusing incidents have arisen out of the instruction the Belleville children have been receiving in their schools. For instance, Mr. Scott told Hydro News about the little fellow who went home and asked his father if he had paid the electric bill. The father, somewhat surprised, checked up and found that it had been paid. "But," said the boy with all the savoir faire and assurance of one who has

(Continued on page 23)



## FORMER HYDRO EMPLOYEES IN GOVERNMENT SERVICES

**Many Hold Key Military and Civilian Positions—  
More Than 900 in Armed Forces**

**W**HEN the story of Hydro's entire contribution to the war effort can be told, it will be chronicled as one of the outstanding epochs in the history of Ontario's public ownership enterprise.

This fact has already been recognized by many people from public statements made from time to time by Dr. Thomas H. Hogg, chairman and chief engineer of the H.E.P.C., and his colleagues on the Commission, Hon. W. L. Houck and J. Albert Smith.

These statements have given some indication of the way in which Hydro has marshalled the full might of its resources to provide the driving force which is keeping Ontario's war-gearred industries operating twenty-four hours a day.

At the same time, there are now more than nine hundred men who left the service of the Commission to join the armed forces. Those who are serving the government in key military and civilian capacities include the following:

### MILITARY

**Major W. J. Baxter** (Electrical Engineering): Headquarters Staff, Pacific Coast Command, Victoria, B.C.

**Major A. G. Brenneman** (Operating): 1st Canadian Corps of Signals, Canadian Army Overseas.

**Captain Edgar Bell** (Operating): No. 11 District Depot, Vancouver Barracks, Vancouver, B.C.

**Captain Nelson Bullock** (Operating): Perth Regiment, Canadian Army Overseas.

**Major F. J. Chapple, M.C., D.C.M.** (Accounting): No. 8 Coy., Veterans' Guard of Canada, Chatham, N.B.

**Major H. K. Clifton** (Electrical Inspection): Veterans' Guard of Canada, Farnham, Quebec.

**Major G. H. Free** (Operating): No. 3 D.T.R., C.O.C. Headquarters, Kingston, Ont.

**Flight-Lieutenant R. J. Farquharson** (Electrical Engineering): No. 14, S.F.T.S., Aylmer, Ontario.

**Flight-Lieutenant K. S. Gemmel** (Operating): 57 Hazel Avenue, Ottawa, Ontario.

**Lieutenant-Colonel T. F. Howlett** (Municipal Engineering): Royal Canadian Engineers, Fort York Armouries, Toronto, Ont.

**Captain William Hamilton** (Electrical Engineering): 2nd Canadian Division Ordnance Workshop, Canadian Army Overseas.

**Captain C. G. Hopkins** (Property): Headquarters Staff, M. D. No. 2, 159 Bay St., Toronto, Ont.

**Major G. A. Ironside** (Operating): Army Training School, Hamilton, Ont.

**Flight-Lieutenant W. E. Lang** (Municipal Accounting): R.C.A.F. Station, Camp Borden, Ontario.

**Major H. B. Mattson** (Construction): No. 1 Army Field Workshop, R.C.O.C., Canadian Army Overseas.

**Flight-Lieutenant H. A. S. Molyneux** (Electrical Engineering): R.C.A.F. Headquarters Staff, Ottawa, Ontario.

**Major E. W. Oddleifson** (Operating): 2nd Battalion, Royal Canadian Engineers, Canadian Army Overseas.

**Major E. R. Purvis, D.S.O., E.D.** (Electrical Engineering): Headquarters Staff, Vancouver Defences, Vancouver, B.C.

## ON GOVERNMENT SERVICE



Among the many former H.E.P.C. employees who are now serving Canada in key military and civilian positions are the fourteen men shown above. They are: top row, left to right, Edgar Bell; Nelson Bullock; J. M. Dymond; G. W. Free; second row, W. Hamilton; G. A. Ironside; J. R. A. Leslie; T. G. Quance; third row, Frank Reed; C. L. Rogers; T. E. Sisson; V. E. VanZant; bottom row, J. H. Waghorne; and A. J. Wright.

**Captain T. G. Quance** (Testing and Inspection): 1st Canadian Division Workshop, R.C.O.C., Canadian Army Overseas.

**Captain F. G. Reed** (Lighting Service): Second Divisional Signal Corps, Toronto.

**Major E. W. Stenhouse, M.M.** (Accounting): 2nd Division Signals, 185 Spadina Avenue, Toronto, Ont.

**Captain T. E. Sisson** (Sales Promotion): 4th Canadian Armoured Brigade, Canadian Army Overseas.

**Captain H. J. R. Thornton** (Municipal Accounting): Armoured Division, c/o Canadian Bank of Commerce, 2 Lombard St., London, England, Canadian Army Overseas.

**Major C. A. West** (Municipal Engineering): 9th Armoured Regiment, 5th Canadian Division Tank Corps, Canadian Army Overseas.

### CIVILIAN

**J. M. Dymond** (Employees' Relations): With the Wartime Bureau of Technical Personnel, as Chief Executive Officer, Ottawa, Ont.

**J. R. Leslie** (Testing and Inspection): With the National Research Council, Ottawa.

**C. Lowman** (Testing and Inspection): With the Department of Munitions and Supply, Signal Section.

**C. H. McHardy** (Electrical Engineering): Originally with the Toronto Shipbuilding Company, Mr. McHardy has since enlisted in the Navy.

**S. A. Ord** (Municipal Engineering): With the Department of Munitions and Supply.

**P. E. Pashler** (Municipal Engineering): With the National Research Council, Ottawa.

**C. L. Rogers** (Sales Promotion): With the Department of Munitions and Supply.

**J. R. Smith** (Electrical Engineering): With the De-

*(Continued on next page)*



## AUSTRALIAN VISITS H.E.P.C. BUILDING

**Ernest Bate, Chief Engineer, Power Production,  
State Electricity Commission of Victoria,  
Flew to Britain Last September**

**I**N Victoria, Australia, the State Electricity Commission serves an area of approximately 30,000 square miles and provides electrical service for 300,000 consumers, representing 26 per cent of the population in the supply area. The power resources of Victoria are more than 500,000 horsepower and the average amount of electricity used per year by each consumer is between 650 and 660 kilowatt-hours.



Ernest Bate

These interesting facts were mentioned by Ernest Bate, M.C., B.Sc., A.C.G.I., chief engineer, power production, of the State Electricity Commission of Victoria, when interviewed by Hydro News, recently.

Quiet, unassuming and approachable, Mr. Bate was a visitor to the Administration Building of The Hydro-Elec-

tric Power Commission of Ontario during his brief stay in Toronto. On loan to the Commonwealth Government, he flew to Britain via the United States last September on a special wartime mission. After spending five months in Britain, Mr. Bate flew back to the United States, his business there having covered a period of three weeks during which time he had conferences in Washington, New York, Buffalo and other key cities. When he arrived in Toronto he had travelled approximately 25,000 miles.

It was revealed that, among other things, Mr. Bate is compiling data on the latest developments in the transmission of power.

In many respects, he stated, the State Electricity Commission of Victoria is similar to the H.E.P.C. His commission, which has 7,000 employees on the payroll, has a chairman and three commissioners and comes under the jurisdiction of the Minister of Electrical Undertakings.

After "talking shop" with the distinguished visitor for a time, Hydro News learned that he had served on the general staff of the Fourth Australian Division in the last war and prior to that he had spent nearly two years in Berlin. When he visited the German capital again in 1928, Mr. Bate said that he had formed the opinion that another war was inevitable.

Asked if he thought the Japs would attempt an invasion of Australia, Mr. Bate replied, "I can speak only as an amateur. My personal opinion, for what it may be worth, is that I do not think the Japs would be successful if they attempted an invasion."

Other comments revealed that Mr. Bate regards the British Commonwealth Air Training Plan not only as a vital factor in the Allied blueprints for victory but as a force which is already making a vital contribution to the unity, goodwill and understanding upon which the post-war world must be built.

## OTTO HOLDEN IS ELECTED PRESIDENT OF THE R.C.I.

**O**NE of the outstanding honours in Canadian science, the presidency of the Royal Canadian Institute has been conferred on **Otto Holden**, B.A.Sc., C.E., chief



Otto Holden

Hydro Electric Power Com-hydraulic engineer of The mission of Ontario. Mr. Holden joined the staff of the Commission in 1913, upon his graduation from the University of Toronto.

The Royal Canadian Institute, which observes its 100th anniversary in 1948, embraces prominent figures in all branches of science throughout the Dominion. An illustrious honorary member of the Institute is Lieut.-General A. G. L. McNaugh-

ton, Commander of the Canadian Army Overseas and Chairman of the National Research Council.

### KILLED IN ACTION

Pilot Officer Clare McRoberts, R.C.A.F., who was on the staff of the H.E.P.C. electrical engineering department, transmission section, from July, 1939, to December, 1940, has been reported killed on active service overseas. Information received by relatives stated that he was killed about Christmas, 1942, while on a bomber flight over Germany.

### LADIES' BRIDGE BOOSTS WAR SERVICES FUND

A sum of approximately \$115 has been added to the Ontario Hydro-Electric Club's War Services Fund as a result of the ladies' annual bridge held in the Eaton Auditorium recently. Prizes for winners at each of the 92 tables and lucky number prizes were distributed.

### IN GOVERNMENT SERVICES

*(Continued from previous page)*

partment of Munitions and Supply.

**V. E. VanZant** (Testing and Inspection): With the Inspection Board of the United Kingdom.

**J. H. Wagborne** (Testing and Inspection): With the University of Alberta as lecturer to Navy ratings and third and fourth-year students in Electrical Engineering.

**A. J. Wright** (Electrical Engineering): With the Department of Munitions and Supply.

In addition to the foregoing civilian posts, the following members of the staff are giving part-time instruction at the University of Toronto in subjects related to the war effort:

**J. B. Bryce**, **R. Barbour** and **G. E. McLure**, Hydraulic Engineering Department; **L. D. Clement**, **H. J. Franklin**, **R. C. McMordie** and **E. A. Ricker**, Electrical Engineering Department; **Dr. A. D. Hogg** and **J. W. Speight**, Testing and Inspection Department.



CANADA'S National Nutrition programme is off to a fine start. On every side we find homemakers, business women and men asking recognized authorities about this now-widely-publicized subject of correct diet in relation to good health. No doubt this programme will influence food habits of the nation and make every Canadian kitchen work for victory.



Edith Muiir

Here are the simple facts. Our daily diet should be built around adequate amounts of protective foods; milk and dairy products; green and yellow vegetables, (some raw); fruits or fruit juices; whole grain cereals; eggs, meat or fish; and Canada Approved bread, brown or white. After observing these cardinal rules, we may tickle our palates with sweets and fats.

\* \* \* \* \*

### Milk Tops The List

All nutritionists agree that milk tops the list of protective foods, and this is especially true in the case of children. Its rich calcium content is indispensable in the formation of teeth and bones. It may be consumed in many forms, including milk puddings, cream soups, sauces and of course as a beverage.

Cheese contains the same high quality protein, minerals and vitamins as milk itself, and should be incorporated in our menus in numerous ways.

Next in importance come the green vegetables, supplying essential mineral salts, particularly iron (milk contains no iron). They are also a good source of bulk or cellulose and help maintain the alkalinity of the blood.

\* \* \* \* \*

### Vegetables for Health

Lettuce, watercress and other salad greens are excellent sources of vitamin C, and they also contain vitamins A and B. Carrots, yellow turnips, string beans and peas are rich in vitamin A. In order to keep intact all the precious vitamins, they should be served raw whenever possible. This is where the victory garden will play a big part. Fruits contain large quantities of minerals and vitamins B and C. Citrus fruits and tomatoes (oven canned) are high in vitamin C. Some form of cod liver oil taken during the winter months will help provide vitamin D which is obtained from the sun's rays in summer.

Four to six slices of Canada Approved bread eaten daily (or the equivalent in muffins, rolls or porridge) along with starches, sugars and fruit, provide the important B vitamins and are essential fuels for vitality.

Rationing of sugar and specified meats will restrict our menus to foodstuffs which are more plentiful. Whole

## CANADA'S OFFICIAL FOOD RULES

*These are the Health-Protective Foods*  
Be sure you eat them every day in at least these amounts. (Use more if you can)



**MILK**

Adults  $\frac{1}{2}$  pint Children—more than 1 pint And some **CHEESE**, as available



**FRUITS**

One serving of tomatoes daily, or of a citrus fruit, or of tomato or citrus fruit juices, and one serving of other fruits, fresh, canned or dried.

**VEGETABLES**

(In addition to potatoes of which you need one serving daily)—Two servings daily of vegetables, preferably leafy green, or yellow and frequently raw



**CEREALS AND BREAD**

One serving of a whole-grain cereal and 4 to 6 slices of Canada Approved Bread, brown or white



**MEAT, FISH, ETC.**

One serving a day of meat, fish, or meat substitutes Liver, heart or kidney once a week



**EGGS**

At least 3 or 4 eggs weekly






*Eat these foods first then add other foods you may wish*

Fish liver oils are essential for children and should be given as recommended by a physician They may also be required by adults

**EAT RIGHT, FEEL RIGHT....Canada Needs You Strong**

grains and soya beans are among the many excellent "food-stretchers."

Proteins (meat, fish, poultry, eggs, dairy products, dried peas and beans) are required for the building of tissue. These are known as the refuelling properties in our daily diet.

\* \* \* \* \*

### Canada's Official Food Rules

Canada's Nutrition programme is going to play a leading part in our daily routine, and in view of its importance the Nutrition Services have outlined a few basic rules, which are given below:

(These are the health-protective foods. Be sure you eat them every day in at least these amounts.)

Milk (Adults)  $\frac{1}{2}$  pint: (Children) more than 1 pint: some cheese.

Fruits—One serving of tomatoes or a citrus fruit, or tomato or citrus fruit juice, and one serving of other fruits, fresh, canned or dried.

Vegetables—One serving of potatoes, daily. And two servings of other vegetables, preferably leafy green or yellow, and frequently raw.

Cereals and Bread—One serving of a whole-grain cereal and 4 to 6 slices of Canada Approved bread, brown or white.

(Continued on page 21)



## Hydro Girls Train As Nurses' Aides

**In Red Cross Emergency Nursing Reserve—Can Be Called Upon In Case Of Epidemics Or Air Raid Emergencies**

By GRACE J. CARTER

More than twenty Hydro girls are now in training in the Red Cross Emergency Nursing Reserve, whose qualified members can be called upon to provide nursing aid in case of epidemics or air raid emergencies.

Organized to help offset the wartime shortage of nurses on the home front, this service is designed to give laywomen an opportunity of learning how to do a useful and vital job. Its primary requirements are a readiness to learn, practise and serve. Instruction and direction are provided by registered nurses.

The organization of the Red Cross Reserve, in Toronto, is sponsored by the Victorian Order of Nurses, the Department of Public Health, and St. Elizabeth's Nurses, from which agencies will emanate any calls for the services of the members of the Nursing Reserve.

For purposes of instruction, this particular branch of the Red Cross embraces three courses—Home Nursing, Emergencies in War and Civilian Defence.

### Nurses Volunteer As Instructors

A comprehensive knowledge of home nursing is the first requisite, and many registered nurses throughout the province have volunteered to act as instructors in their spare time. As one of these instructors, Miss Frances L. Powell, R.N., H.E.P.C., undertook to direct a group of Hydro girls, who have been meeting in the head office auditorium, two nights each week, the complete course of lectures covering a period of eight weeks. Upon completion of this training, the girls have the opportunity to practise at Red Cross headquarters. These practice periods (once a week) are to be continued for the duration of the war, or until service is required. In addition to this, these ladies have been taking the basic Civilian Defence Course (A.R.P.). Later, they will study Emergencies in War.

### Recall "Flu" Epidemic

The Hydro girls, some twenty-odd in number, who have completed the home nursing class, are: Alberta McAllister; Margaret Grant; Leah Griffe; Norma Chambers; M. I. Evans; J. E. Hamilton; Grace Coughlin; E. M. O'Connell; A. V. Loose; Mabel Clarke; Dorothy Sweiden; Audrey Hitchman; Margaret Munro; Muriel Hambly; Eileen Gowland; June Brittain; Margaret MacMillan; Stella Robertson; B. R. Irvine; Vivian Ferguson; Mrs. Pearl Walton; Mrs. Leila MacDonald; and Mrs. Kathleen Stockwell.

Many will recall the "flu" epidemic of 1919-20, when more lives were lost than during the First Great War. A large number of these deaths was attributed to insufficient medical attention, as the available nurses found it impossible to cope with all the demands made upon their services. It is largely to prevent a recurrence of a similar catastrophe that the Emergency Nursing Reserve has come into being. Should such an emergency arise, however, these Hydro girls, acting as nurses' aides, along with thousands of others, will be qualified and willing to do their part in the alleviation of human suffering.



Here are a few of the H.E.P.C. girls who are training in the Red Cross Emergency Nursing Reserve: top row, left to right, Leah Griffe; Alberta McAllister; Eileen Gowland; Stella Robertson; Muriel Hambly; Kathleen Stockwell; bottom row, left to right, Mrs. Leila MacDonald; Vivian Ferguson; B. R. Irvine; Frances L. Powell, R.N., instructor; Ann Loose and Margaret Munro.

Taken at Red Cross headquarters, the lower illustration shows some of the girls in action. Under the watchful eye of Miss Powell (left) Norma Chambers adroitly handles an important assignment. The on-lookers are: Margaret Grant, Margaret Munro, M. I. Evans, Leah Griffe and Grace Coughlin.

### HONOUR SIMCOE ACCOUNTANT: TWENTY-FIVE YEARS' SERVICE

Members of the Simcoe Public Utilities Commission gathered recently in the town hall to pay tribute to Miss Lena Derrickson, accountant, on the completion of 25 years' service as an employee.



Miss L. Derrickson

G. K. McKie, chairman of the Simcoe Commission, presiding for the occasion, called upon commissioner J. M. Stalker, who presented Miss Derrickson with a gold wrist watch. The recipient in expressing her appreciation, commented on her many pleasant associations during the 25-year period.

Lena also received a leather handbag from her co-workers, at a dinner given in her honour.

An interesting feature of Miss Derrickson's lengthy term of service is that she has been absent only five days through illness, and she has been with the municipality longer than any other present employee.

## VICTORY GARDENERS ARE ON THE MARCH

Ontario Hydro-Electric Club Campaign Swings  
Into High Gear With 572 Employees  
Registered To Date

By W. ROY HARMER, Chairman,  
Victory Garden Publicity Committee

WITH 572 H.E.P.C. employees registered to date, the Ontario Hydro-Electric Club's Victory Garden Campaign is swinging into high gear.

Already, folders containing general information have been distributed to all registrants, while two new committees have been formed, one under the chairmanship of Jack MacLellan, to look after field staffing activities and the other, headed by A. H. Sharpe, to handle the purchasing of seeds and supplies.



W. R. Harmer

### Competitions Arranged

Under the able chairmanship of Adam Smith, all committees are functioning smoothly, and plans for five competitions are now under way. They are as follows:

1. Vegetable garden plan: judged on the basis of garden layout and arrangement.
2. Vegetable garden competition: judged on photographs to be submitted by gardeners throughout the season.
3. Garden records competition: judged on the basis of records kept in the supplied folder.
4. Victory harvest competition: judged on basis of vegetable display conducted by horticultural societies, fall fairs and the Hydro competition.
5. Grand sweepstake competition: open to those who have participated in first four competitions.

The prizes will consist of silver cups, fertilizer, seed and other useful supplies.

A planned series of lectures held in the auditorium has been instructive and well attended.

On March 24 A. H. Sharpe, landscape engineer, H.E.P.C., gave the first in a series of talks on gardening to Hydro employees. His subject, "Garden Planning," was timely and well received.

On March 25 and 26 a programme was arranged for the wives of the Hydro employees and the ladies of the staff. John Clarke, Ontario Department of Horticulture, in an illustrated lecture stressed the importance of Victory Gardens, especially for city people.

### Further Lectures Planned

Miss Frances L. Powell, R.N., H.E.P.C. nurse, and Miss Edithemma Muir, Hydro home economist, co-operated in giving a lecture which stressed the value of gardening from the standpoint of health and, at the same time, emphasized the nutritional value of thrifty fresh-from-the-garden vegetables.

George Rush of the Ontario Department of Agriculture, delivered an instructive address on "What Vegetables to

"VENI, VIDI, VICI"



THIS is a cartoonist's conception of how to put the V in victory garden. Drawn by Ken Brown, H.E.P.C., it shows how vigour and vigilance in the vineyard will produce a variety of vitamin-rich vegetables for vitality and victory. As the gardener surveys the results of his labours he is apparently recalling the famous "V-words" of Julius Caesar in 47 B.C.—"Veni, Vidi, Vici." When he said that Julius was announcing his victory over the Pharnaces.

## DO YOU KNOW?

For the big offensive in 1943 our soldiers will need plenty of collapsible assault boats. They cost \$225 each, and your Victory Bond investments will buy them.

While it is earning interest for you, your \$100 Victory Bond will supply a Canadian soldier with 5½ pounds of food daily for more than two months.

In the past three years thrifty Scots have contributed \$1,475,000,000 to Britain's War Savings campaign. If you are canny you will invest all you can in Canada's Fourth Victory Loan.

Grow," and listed varieties which would yield the best crops in this district.

In addition to this government department, the O.A.C. at Guelph is also supporting the Hydro Victory Campaign. C. L. Thomson of this widely known agricultural college, addressed the Hydro gardeners on "Soils," discussing the various types of soils, and making helpful recommendations on their preparation and fertilization.

Further lectures are being planned and announcements will be posted on the bulletin boards.

The folder received by all registrants contains, in addition to general information, a section for the garden plan and garden register; a section on culture notes, lists of recommended varieties of vegetables; a planting table, and notes on planning, preparation and fertilization of the soil. Instructions on insect control, harvesting, canning and storage of vegetables will be issued at a later date.

Members of the Victory Garden Committee appreciate the interest which Hydro employees are showing in this vital work. They are anxious that everyone who can, should take part in the Campaign, and will do their utmost to assist in solving any gardening problems.



## POINTERS FOR PLANTERS

W. H. Carr, president of the horticultural section of the Ontario Hydro-Electric Club, and Adam Smith, chairman of the Hydro Victory Garden Campaign Committee, have passed along the following pointers to gardeners and prospective gardeners:

1. Plan the planting to fit the area available so as to give adequate growing space for each plant, with no excessive thinning required later.
2. Begin the ploughing or spading when the ground is in the proper condition; friable, not too wet or too dry.
3. Don't get spring fever and plant too early if you want the plants to get off to a good start.
4. Grow the vegetables relished by the family, but avoid those plants which require excessive space.
5. Plan for successive crops so that the vegetables will be fresh and the fullest use is made of the area.
6. Select the best varieties of seeds and plants: get the best quality and most prolific producers.
7. Choose varieties which have recognized resistance to diseases and pests.
8. Don't neglect your garden: remember you have used materials, the production of which is now your responsibility.

## NAME OF BELLEVILLE

*(Continued from page 6)*

who are stationed at the three nearby training stations.

Mr. Scott estimates that there are more than 2,000 people engaged in war work at Belleville where they're making accessories for tanks, trucks and planes, flame throwers, ship hardware, ship winches, aircraft parts and military clothes.

When discussing some interesting facts associated with Belleville's history, Mr. Scott recalled that a stone house which General Brock and his staff used as a temporary headquarters in the war of 1812, is still standing. He also recalled that Sir Mackenzie Bowell, who was Prime Minister of Canada, came to Belleville when he was ten years of age and served with George Benjamin who established the Belleville Intelligencer in 1834.

The Belleville Public Utilities, located at 277 Front street, has a staff of thirty-four.

## HYDRO HOME FORUM

*(Continued from page 18)*

Meat, Fish, etc.—One serving a day of meat, fish or meat substitutes. Liver, heart or kidney once a week.

Eggs—At least 3 or 4 weekly.

Eat these foods first, then add any other foods you wish.

Some source of vitamin D such as fish liver oils, is essential for children, and may be advisable for adults.

\* \* \* \*

By the way, remember that numbers 1, 2 and 3 sugar coupons expire on April 30; and on April 29, numbers 5 and 6 tea and coffee coupons, as well as number 8 butter coupon became valid.

## HYDRO CLUB PLEDGES \$4,000 TO RED CROSS

Members of the Ontario Hydro-Electric Club are pledged this year to donate a minimum of \$4,000 to the Canadian Red Cross Society.

In connection with the recent Red Cross drive, the club conducted a draw for four prizes. The first prize, a fine oil painting of the "Old Mill Bridge" by H. H. Leeming of the electrical engineering department H.E.P.C., was won by Miss M. Menzie. Other prize winners were: A. H. Frampton, Miss E. L. Myers and Miss Roberta Ellwood.

To date, according to R. M. Laurie, president, the club has raised approximately \$27,000 for distribution among recognized war charities, including the Red Cross; Y.M.C.A.; Salvation Army; British War Victims' Fund; and other organizations.

During the past two years the club has sent approximately a million cigarettes to Canadian service units overseas, and more than 300,000 to H.E.P.C. employees on active service.

## WHEN THE LIGHTS WENT ON

*(Continued from page 5)*

After many months of painstaking preparation and planning, Edison declared everything to be in readiness. Shortly after dusk, on a cool November night in 1883, a huge throng congregated in the weave shed of the Canadian Cottons Limited to witness the historic event. Famous scientists, governmental and industrial leaders, company employees and hundreds of excited onlookers from Canada and the United States filled the room to overflowing. As the great moment drew nearer, the eager young inventor darted in and about the maze of electrical equipment, adjusting a bolt here and there, twisting odd bits of wire, tinkering with the apparatus, so that everything might be geared to perfection. Then he asked those present to leave their watches in the office safe so as to avoid the danger of magnetization.

The honour of turning on the power was reserved for Edison. A tense silence swept over the crowd as he waved his hand as a signal for the lowering of the gas lights. Little by little, the room was enveloped in darkness. Edison pulled the switch. A momentary pause, a breathless suspense, and then the gentle humming sound of machinery broke the silence, and a myriad of tiny glass globes slowly flickered into a golden glow—growing stronger and stronger—until the entire room was bathed in brilliance. The gasping crowd stood back in awe, gazing in wonderment at the marvellous spectacle before them. Then, all at once, the din of wild cheering literally shook the rafters of the huge enclosure.

Just at that moment, a little technical difficulty arose. In their eagerness to make the lighting as brilliant as possible, the electricians allowed the voltage to build up, burning out many globes shortly after they became illuminated, and during the excitement Mr. Hitchcock and a troupe of fellow-workers scurried about the room with step-ladders and baskets of globes, replacing those that failed. But the experiment had been a success. Canada's first industrial lighting plant was in operation!



*A certain Ontario teacher took a great deal of trouble to try and explain the difference between "stoic" and "cynic." She concluded that she had not been very successful when she read the following answer to an examination question: "A stoic is what brings the baby and a cynic is what you wash it in!"*

*No doubt this student's knowledge and vocabulary are now more extensive.*

\* \* \*

Many veterans of the last war have interesting memories of cavalry regiments. For instance there was the recruit who was instructed to bridle and harness a horse. When the sergeant-major came along for his mount he found the recruit holding the bit close to the horse's mouth. "Well, what are you waiting for?" roared the impatient N.C.O. "Until he yawns," was the reply!

\* \* \*

"What happens," asked the science master, "when a body is immersed in water?" Student: "The telephone rings!"

\* \* \*

When a man charged with being intoxicated told the judge that he had not purchased the liquor, but that a Scot had given it to him, he was sentenced to thirty days for perjury.

\* \* \*

Gangster (rushing into a restaurant shooting right and left): "All you dirty skunks get out of here."

The customers fled in a hail of bullets—all except an Englishman, who calmly went on eating.

"Well," snapped the gangster, waving the smoking gun.

"Well," remarked the Englishman, "there certainly were a lot of them, weren't there?"

## **Shocking Conditions!**

*Some shocking conditions were witnessed in a pub in Fetter Lane, London, recently when a customer asked for a pint of ale.*

*The barmaid took down the metal tankard from the shelf, drew a pint, screamed and threw the entire contents over the customer. In high dudgeon, the latter reached to take back his money, touched the money and yelled. The charwoman grabbed her mop to wipe up the floor, screamed, jumped backwards and fell down the cellar steps.*

*Thirsty regulars who had picked up their glass tumblers of ale without incident tried to pick up their change and jumped away from the counter with cries of pain. The counter was littered with money and the pub filled with shouts and confusion as the customers and barmaids shrank fearfully into a corner.*

*The reason? Everyone who touched anything in the pub got a heavy electric shock. During the last blitz in the district an electric conduit, which had been damaged, electrified the whole building. Every piece of metal on the bar and the wet patch of beer carried a shock.*

*Electricity for the district was switched off while repairs were made and the beer was consumed.*

Mother: Sonny, go over and find out how old Mrs. Harris is this morning.

Sonny (on return): She says today she's 73 years, 6 months and 2 days.

*A manager of a Hydro municipal utility was walking down the street with a friend who was visiting the town, when he pointed out a man whom he described as "one of our early settlers." "Why he's just a young man," exclaimed the friend. "True enough," replied the utility manager, "I mean he pays his bills on the first of each month."*

\* \* \*

You must have had a terrible accident last night. What did you hit?

I was driving along a country road when I hit a cow.

A jersey cow?

I didn't see the license plate.

\* \* \*

Guest: My dear, where did you get that wonderful string of pearls from? You don't mind my asking do you?

Hostess: Not at all—they came from oysters.

\* \* \*

When asked about his idea of strategy, the recruit replied, "It's when you're out of ammunition, but keep right on firing."

\* \* \*

Wife: Goodness, George, this is not our baby. This is the wrong carriage.

Hubby: Quiet. This carriage has rubber tires.

\* \* \*

The prospect was asked if he would like a straight-life policy. He thought for a minute and replied, "Well er, I do like to step out once in a while."

\* \* \*

Groom: Did you make this cake, dear?

Bride: Here's the recipe. I clipped it from a magazine.

Groom: Are you sure you read the right side. The other side tells how to make a rock garden.

\* \* \*

Then there was the student who claimed that "Class Hatred" made him stay at home.



## New Increase Recorded In Primary Load Demand

The demand for primary power load for all Hydro systems during February, 1943, exceeded that for the corresponding month last year by almost 60,000 horsepower. This increase of 2.8 per cent is recorded in the latest monthly summary of loads. Load demands in the Northern Ontario Properties showed the sharpest gain, with an increase of 15,000 horsepower or 7.7 per cent, while the Niagara and Eastern Ontario systems both gained appreciably. The total primary demand for the four H.E.P.C. systems and the Northern Ontario Properties for February, 1943, was 2,226,260 horsepower. These figures are based on the maximum 20-minute peak horsepower load for the period.

Combined primary and secondary loads for the same areas in February of this year increased by 2.2 per cent, or approximately 52,000 horsepower, over the corresponding month in 1942.

### PRIMARY AND SECONDARY LOADS

	Maximum 20-Min. Peak H.P. Feb., 1943	Feb., 1942	Per Cent Increase
Niagara System .....	1,783,110	1,687,265	5.7
Eastern Ontario System .....	179,965	175,220	2.7
Georgian Bay System .....	45,221	46,104	— 1.9
Thunder Bay System .....	115,282	132,882	—13.2
Northern Ontario Properties .....	241,584	272,132	—11.2
Total of all systems .....	2,365,162	2,313,603	2.2

## HYDRO GOES TO SCHOOL

(Continued from page 15)

inside information," do you know if the bill is correct." The father was "stumped," and so the young lad took the bill, went downstairs, read the meter and returned it to his father with the remark, "It's o.k."

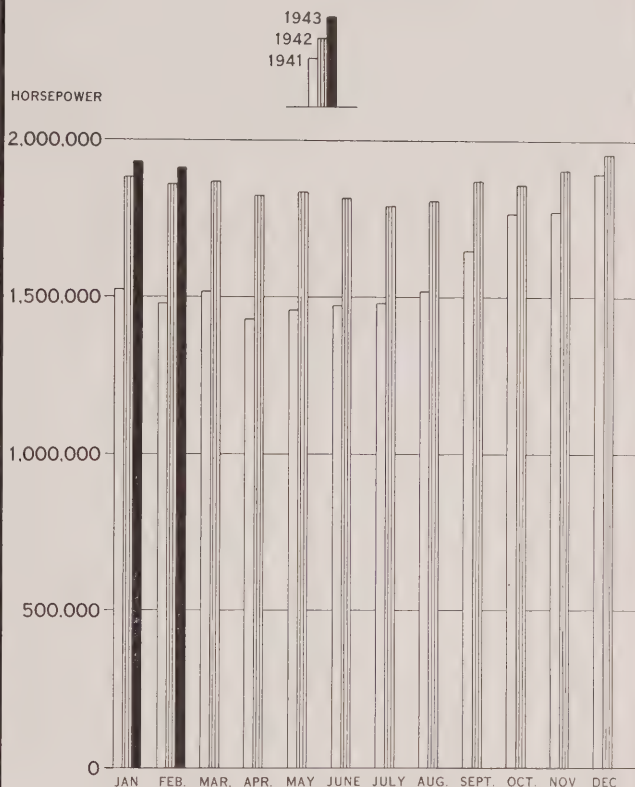
There is also the true story of another Belleville lad who had been asked to find out where the electric and water "shut-offs" were located in his home. Later, while his mother was wondering why the electric light and water had been cut off, the lad arrived on the scene and proudly announced, "Mom, I know where our water and electric shut-offs are."

From a more serious standpoint, however, the results of the work which is being done in the schools is reflected in the interest shown by the children in use of Hydro and other utility services in their own homes.

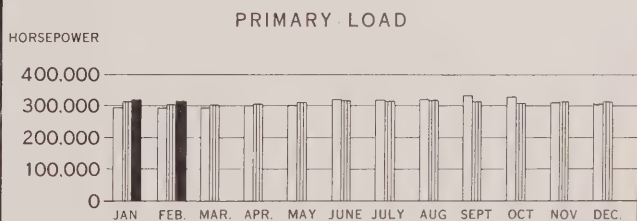
### Instruction in Resuscitation

The work which is being done by Mr. Smith in the schools has not stopped with the subject of public utilities. He has also been instructing Grades 7 and 8 in the public schools and students at the collegiate in resuscitation so that the children will know what to do in cases of gas poisoning, electrocution, drowning or other emergencies. The method followed at each school is to carefully train six boys and six girls who, in turn, train other children. When the school teachers think the children are qualified, Mr. Smith is notified and they are examined. Those who pass receive cards which testify to their ability to render resuscitation. To date, more than 1,000 have undergone training and approximately 700 have passed the examination.

## SOUTHERN ONTARIO SYSTEMS NIAGARA — GEORGIAN BAY — EASTERN ONTARIO PRIMARY LOAD



## NORTHERN ONTARIO PROPERTIES AND THUNDER BAY SYSTEM PRIMARY LOAD



### PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	FEB. 1943	FEB. 1942	
NIAGARA SYSTEM .....	1,685,657	1,642,761	+ 2.6
GEORGIAN BAY SYSTEM .....	45,221	46,104	— 1.9
EASTERN ONTARIO SYSTEM .....	179,965	171,413	+ 5.0
THUNDER BAY SYSTEM .....	100,509	106,595	— 5.7
NORTHERN ONTARIO PROPERTIES .....	214,908	199,612	+ 7.7
TOTAL .....	2,226,260	2,166,485	+ 2.8

# MUNICIPAL LOADS, FEBRUARY, 1943

NIAGARA SYSTEM (25-Cycle)			Popula- tion			Popula- tion		
	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Acton	1,544	1,903	Erie Beach	7	21	Palmerston	554	1,400
Agincourt	187	P.V.	Essex	541	1,886	Paris	1,835	4,604
Ailsa Craig	118	487	Etobicoke Twp.	7,203	V.A.	Parkhill	156	1,029
Alvinston	92	649	Exeter	544	1,654	Petrolia	963	2,768
Amherstburg	737	2,704	Fergus	1,179	2,759	Plattsville	131	P.V.
Ancaster Twp.	346	V.A.	Fonthill	162	860	Point Edward	1,624	1,199
Arkona	52	403	Forest	472	1,562	Port Colborne	2,445	6,928
Aurora	1,237	2,821	Forest Hill	6,794	12,172	Port Credit	820	1,934
Aylmer	763	1,985	Galt	11,485	15,126	Port Dalhousie	926	1,599
Ayr	151	760	Georgetown	1,517	2,452	Port Dover	372	1,790
Baden	450	P.V.	Glencoe	182	763	Port Rowan	99	700
Beachville	767	P.V.	Goderich	1,403	4,674	Port Stanley	280	824
Beamsville	373	1,227	Granton	56	P.V.	Preston	4,286	6,656
Belle River	179	836	Grimsby	735	1,983	Princeton	114	P.V.
Blenheim	499	1,873	Guelph	11,248	23,074	Queenston	80	P.V.
Blyth	104	662	Hagersville	491	1,524	Richmond Hill	423	1,295
Bolton	202	629	Harriston	398	1,292	Ridgetown	529	1,986
Bothwell	113	683	Harrow	450	1,092	Riverside	1,127	5,235
Brampton	2,572	5,975	Hensall	176	686	Rockwood	98	P.V.
Brantford	22,468	31,622	Hespeler	2,814	2,938	Rodney	144	758
Brantford Twp.	1,025	V.A.	Highgate	82	322	St. Clair Beach	54	138
Bridgeport	120	P.V.	Humberstone	560	2,831	St. George	130	P.V.
Brigden	75	P.V.	Ingersoll	2,999	5,757	St. Jacobs	312	P.V.
Brussels	119	784	Jarvis	190	513	St. Marys	1,345	4,009
Burford	168	P.V.	Kingsville	599	2,453	St. Thomas	7,447	17,045
Burgessville	36	P.V.	Kitchener	25,742	35,456	Sarnia	10,253	18,599
Burlington	1,536	3,925	Lambeth	114	P.V.	Scarborough Twp.	4,321	V.A.
Burlington Beach	348	1,474	LaSalle	192	907	Seaforth	699	1,782
Caledonia	325	1,430	Leamington	1,350	6,048	Simcoe	2,332	6,340
Campbellville	39	P.V.	Listowel	1,311	2,984	Smithville	170	P.V.
Cayuga	121	700	London	38,225	77,105	Springfield	58	382
Chatham	6,507	17,184	London Twp.	524	V.A.	Stamford Twp.	2,523	8,275
Chippawa	303	1,228	Long Branch	1,258	4,258	Stoney Creek	216	933
Clifford	85	491	Lucan	158	643	Stouffville	226	1,198
Clinton	568	1,879	Lynden	89	P.V.	Stratford	6,368	17,163
Comber	123	P.V.	Markham	276	1,175	Strathroy	1,424	2,834
Cottam	74	P.V.	Merlin	83	P.V.	Streetsville	212	701
Courtright	46	355	Merriton	10,780	2,916	Sutton	148	949
Dashwood	83	P.V.	Milton	1,186	1,915	Swansea	3,041	6,907
Delaware	59	P.V.	Milverton	347	994	Tavistock	579	1,080
Delhi	596	2,430	Mimico	2,396	7,987	Tecumseh	315	2,331
Dorchester	100	P.V.	Mitchell	616	1,670	Thamesford	186	P.V.
Drayton	108	528	Moorefield	52	P.V.	Thamesville	166	816
Dresden	406	1,525	Mount Brydges	92	P.V.	Theford	109	598
Drumbo	81	P.V.	Newbury	30	288	Thorndale	53	P.V.
Dublin	39	P.V.	New Hamburg	510	1,441	Thorold	2,477	5,284
Dundas	3,000	5,245	Newmarket	1,442	3,800	Tilbury	1,358	1,923
Dunnville	1,229	3,916	New Toronto	11,433	9,469	Tillsonburg	1,287	4,602
Dutton	237	830	Niagara Falls	9,776	20,371	Toronto	351,836	657,612
East York Twp.	8,049	41,578	Niagara-on-the-Lake	667	1,764	Toronto Twp.	2,574	V.A.
Elmira	1,035	2,069	North York Twp.	9,912	V.A.	Wallaceburg	2,828	4,802
Elora	400	1,185	Norwich	383	1,301	Wardsville	33	221
Embro	128	420	Oil Springs	211	541	Waterdown	208	867
Erieau	75	281	Otterville	84	P.V.	Waterford	465	1,294
						Waterloo	5,329	8,968
						Watford	355	1,023



## MUNICIPAL LOADS, FEBRUARY, 1943

	H.P.	Popula- tion
Welland	12,061	14,899
Wellesley	102	P.V.
West Lorne	200	768
Weston	4,584	6,165
Wheatley	174	761
Windsor	49,642	104,415
Woodbridge	582	946
Woodstock	7,869	12,339
Wyoming	72	538
York Twp.	21,203	77,175
Zurich	97	P.V.

(25 and 66-2/3 Cycle)

Hamilton	158,217	164,719
St. Catharines	29,636	32,559
Trafalgar Twp.	482	V.A.

(66-2/3 Cycle)

Bronte	142	P.V.
Oakville	1,032	3,369

## GEORGIAN BAY SYSTEM

(60-Cycle)

Alliston	331	1,700
Arthur	129	1,089
Bala	76	355
Barrie	3,664	9,559
Beaverton	170	941
Beeton	121	617
Bradford	157	1,041
Brechin	41	P.V.
Cannington	149	761
Chatsworth	68	333
Chesley	479	1,812
Coldwater	102	545
Collingwood	2,500	6,249
Cookstown	73	P.V.
Creemore	119	661
Dundalk	224	686
Durham	337	1,874
Elmvale	153	P.V.
Elmwood	50	P.V.
Flesherton	52	452
Grand Valley	94	645
Gravenhurst	1,107	2,261
Hanover	1,282	3,190
Holstein	11	P.V.
Huntsville	1,057	2,943
Kincardine	657	2,483
Kirkfield	23	P.V.
Lucknow	311	856
Markdale	156	776
Meaford	608	2,759
Midland	3,849	6,744
Mildmay	110	764
Mount Forest	408	1,936

	H.P.	Popula- tion
Neustadt	44	431
Orangeville	628	2,558
Owen Sound	5,021	13,559
Paisley	97	730
Penetanguishene	944	4,177
Port Carling	112	520
Port Elgin	362	1,415
Port McNicoll	84	950
Port Perry	226	1,175
Priceville	10	P.V.
Ripley	98	420
Rosseau	27	305
Shelburne	257	1,053
Southampton	506	1,467
Stayner	241	1,106
Sunderland	65	P.V.
Tara	72	510
Teeswater	106	873
Thornton	31	P.V.
Tottenham	81	532
Uxbridge	251	1,480
Victoria Harbour	61	979
Walkerton	841	2,534
Waubaushe	70	P.V.
Warton	223	1,750
Windermere	28	117
Wingham	558	2,149
Woodville	63	439

## EASTERN ONTARIO SYSTEM

(60-Cycle)

Alexandria	171	1,976
Apple Hill	37	P.V.
Arnprior	1,108	4,019
Athens	79	626
Bath	29	325
Belleville	6,920	15,498
Bloomfield	95	636
Bowmanville	2,622	3,850
Brighton	306	1,462
Brockville	4,321	10,576
Cardinal	221	1,602
Carleton Place	1,673	4,143
Chesterville	240	1,094
Cobden	81	643
Cobourg	2,047	5,907
Colborne	183	960
Deseronto	173	1,002
Finch	86	396
Frankford	122	1,095
Hastings	80	823
Havelock	134	1,103
Iroquois	201	1,123
Kemptville	326	1,230
Kingston	12,032	29,545

	H.P.	Popula- tion
Lakefield	293	1,301
Lanark	68	686
Lancaster	45	570
Lindsay	3,538	8,345
Madoc	162	1,130
Marmora	119	1,004
Martintown	41	P.V.
Maxville	87	811
Millbrook	83	749
Morrisburg	254	1,484
Napanee	1,138	3,241
Newcastle	168	701
Norwood	113	710
Omeme	176	630
Orono	94	P.V.
Oshawa	16,649	26,610
Ottawa	34,182	150,861
Perth	1,613	4,197
Peterborough	11,645	24,977
Pictou	1,033	3,400
Port Hope	2,230	4,997
Prescott	1,225	3,283
Richmond	55	428
Russell	57	P.V.
Smith Falls	2,532	7,741
Stirling	227	947
Trenton	4,944	8,183
Tweed	177	1,181
Warkworth	60	P.V.
Wellington	179	948
Westport	70	725
Whitby	1,287	4,236
Williamsburg	82	P.V.
Winchester	292	1,017

## THUNDER BAY SYSTEM

(60-Cycle)

Fort William	14,746	30,370
Nipigon Twp.	199	V.A.
Port Arthur	17,964	24,217

NORTHERN ONTARIO  
PROPERTIES

## Nipissing District

(60-Cycle)

North Bay	4,316	16,013
-----------	-------	--------

## Patricia District

(60-Cycle)

Sioux Lookout	300	1,967
---------------	-----	-------

## Sudbury District

(60-Cycle)

Capreol	210	1,660
Sudbury	8,949	32,731



# *Come On* **CANADA** *Pass the Ammunition!*

● The fate of fighting men depends on the production and delivery of planes, tanks, guns, ships and shells . . . depends on passing the ammunition. It takes money to do it! That's why we at home are asked to buy Victory Bonds. Why we too must make sacrifices. And it's worth every sacrifice we can make to provide more fighting dollars to "back the attack". It will bring Victory sooner . . . more, it will save precious lives. Buy another Victory Bond today!

And remember this! When we at home buy Victory Bonds, we are not only doing our patriotic duty, we are investing in the future . . . our future . . . saving money with which to buy the things we'll want when the war is over.

Save for peace days now! Be prepared to obtain when available new, up-to-the-minute equipment for the home that will provide an easier and better life. It may be a new electric stove, a new refrigerator . . . yes, even a complete electric kitchen. It may be any one or a number of new electrical appliances. It may be a new home. Whatever it is, it will be easier to buy if money is invested in Victory Bonds now. Buy Victory Bonds today!

The power that is now helping to produce vast quantities of weapons for our fighting men will be ready, when Victory is won, to contribute to the great peace-time future of Ontario.



**ELECTRICITY  
IS A WAR WEAPON**  
*Save it!*

**BACK THE ATTACK!**  
**BUY**  
*more*  
**VICTORY BONDS**

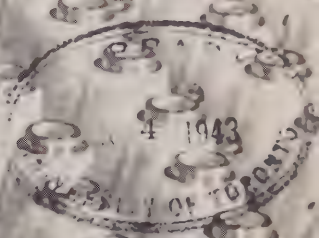
**THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO**





# HYDRO News

ADY OF THE LINE



**VOL. 30**

**MAY, 1943**

**NUMBER 5**





## WHEN YOU FLICK ON A SWITCH . . . *what happens?*

● When you flick on an electric switch, it is a summons to a modern servant that brings instantaneous response . . . electricity cannot be stored . . . it must be produced as it is needed . . . to provide this miraculous service a tremendous amount of equipment and personnel is required . . . huge generating plants . . . thousands of miles of transmission lines . . . giant transformer stations . . . all at your command by the flick of a switch.

● The generators must be in constant operation, ready to meet your needs. Automatically controlled gates, sensitive to every change in load, govern the flow of water that races down the penstocks through the turbine generators which convert the power of the plunging water to electrical energy. The power, thus created, flows out over a network of transmission lines at the amazing speed of 186,000 miles per second.

● Out along the transmission lines to the transformer stations and municipal substations flows this tireless energy, a

supply of power for your community's homes, businesses and war industries . . . here it is fed into the local distribution system and then speeds to the transformer high up on a neighbouring pole to be converted to a voltage suitable for your requirements.

● From the generating station to your home this flow of electrical energy is continuous . . . instantly ready at your fingertips 24 hours a day. To provide this service necessitates an organization constantly alert, maintaining equipment through fair and stormy weather . . . meeting all emergencies so that you may have the use of this modern servant at the flick of a switch.

● To-day this mighty Hydro service, so essential to economy and well-being, is vital in the fight for freedom, without which our industries could not produce the war equipment to maintain our fighting forces and speed the day of Victory for which we are all working. This is the year that counts.

**ELECTRICITY  
IS A WAR WEAPON**  
*Save it!*



# HYDRO News

*formerly The BULLETIN*

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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## The Front Cover



This month's front cover, "A Lady of the Line," directs attention to the important role women are playing in Canadian war plants. In this particular Ontario plant, which is a large consumer of Hydro power, women are helping make the shells which will help our boys overseas to blast their way to Berlin, Tokio and Rome. The lady shown in the picture is engaged in one of the operations involved in the making of fuses.

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May 1943

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## MEN AND MACHINES VERSUS SOLID ROCK

**I**F the above photograph could have been reproduced as a sound picture, one would hear the reverberating roar of pneumatic drills and the noisy, coughing symphony of gouging bulldozers as men and machines blast the contours out of a precipitious wall of rock for the new six-million dollar DeCew Falls power development. Scheduled to be completed this summer, the new development will bear a marked resemblance to Hydro's Queenston plant where power is developed under a head of 300 feet. At DeCew provision is being made for increasing the initial head of 265 feet to 280 feet. Upon completion, it will deliver an additional 65,000 horsepower to the Southern Ontario network. The power-house is being constructed in such a way that additional units may be added at a later date.



## **WATER IS A RESOURCE**

**O**TTO HOLDEN, chief hydraulic engineer, H.E.P.C., focused attention upon the vital and diversified role of water in everyday life when addressing the recent conference on the resources of Eastern Ontario at Queen's University.

Mr. Holden, whose observations at that conference were presented in a paper entitled "Water and Power," succinctly summed up a few simple facts, which are frequently taken for granted, when he said: "Water is an important resource in its own right. Without it, no renewable resource could exist and no population could be maintained and sustained."

And more recently, Dr. Thomas H. Hogg, chairman and chief engineer, H.E.P.C., stressed the importance of conserving water for use during dry summer seasons. He envisioned the possibility of consideration being given to the construction of dams in various parts of Ontario as a post-war works programme. As a typical example of the type of structure which might be considered, if such a programme were to be undertaken, he mentioned the Shand dam near Fergus in Western Ontario.

★ ★ ★

## **DAM ALLEVIATES FLOODS**

**B**UT for the Bark lake dam, ten miles upstream, flood conditions in the vicinity of Barry's Bay and Combermere in the basin of the Madawaska river would be very much worse.

This observation was made to the press recently by Dr. Thomas H. Hogg, chairman and chief engineer, H.E.P.C., after he had personally investigated reports concerning the spring freshets at the Bark lake dam which is the largest of several regulating the flow for the Barrett Chute generating station located some 60 miles downstream.

Throughout the flood period the level of the water in this dam has risen consistently, proving that less water had been released through the dam than had actually flowed into the lake. Preliminary studies show that a great portion of the water came down the York river and other small feeders into Kamaniskog lake above Palmer Rapids dam, and this

water has contributed, in a large measure, to the high water conditions.

Records show that the spring floods this year are among the worst to occur within the past half century. This is due chiefly to the heavy snow fall of last winter and the late spring carrying the snow over to a period of heavy rain fall. It is estimated that the Madawaska river has risen about three feet above normal but it is dropping steadily and the flood conditions appear to be clearing up.

★ ★ ★

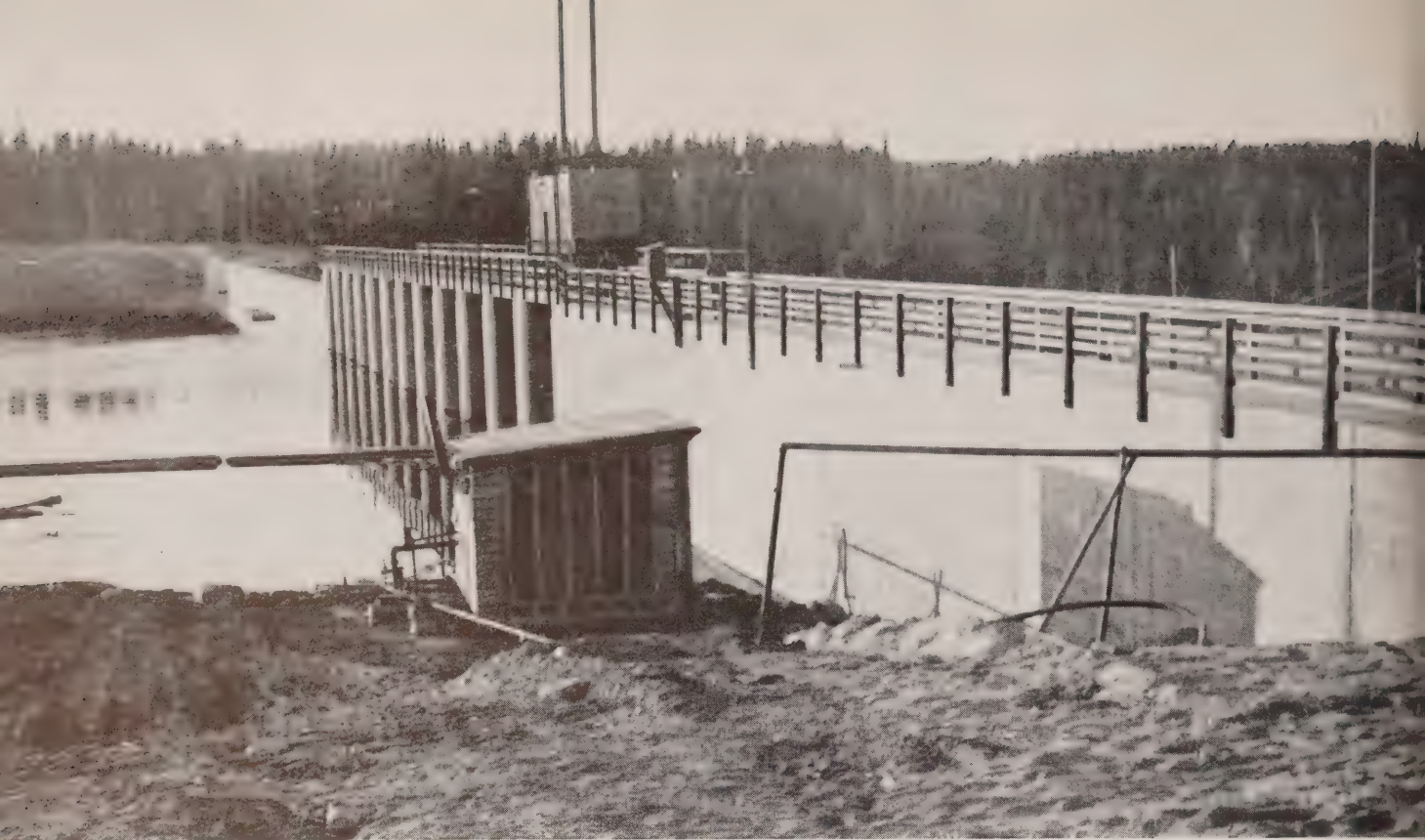
## **HYDRO'S WAR-TIME ROLE**

**S**TRIKING power of a nation's fighting men is in direct proportion to the productive power of its war industries on the home front. Even a highly efficient military machine, trained within an inch of perfection and attuned to fighting timbre, could not wage effective warfare without suitable and adequate weapons. In the present far-reaching struggle, with speed and mechanization the keynotes of military technique, it would be catastrophic if industrial production for war purposes should fall short of meeting its vital challenge.

Canada has rallied large forces to uphold the standards of freedom on the field of battle, and the country's industrial output, on a per capita basis, is approached by that of few countries. In the Province of Ontario, whose total production for all purposes is estimated at nearly 40 per cent of the output of the entire Dominion, there is a heavy concentration of war industries. The Hydro-Electric Power Commission of Ontario is the driving force behind these essential plants, and its tremendous resources are marshalled to serve the needs of a sustained and ever-increasing flow of materials to the front line.

Since the outbreak of the present conflict the Commission has expended more than \$55,000,000 in the construction of new generating plants, transformer stations and transmission lines to generate and distribute power to every point of use. Hydro is helping the wheels of industry to run at full speed, to hasten the day of Allied victory.

A review of this extensive constructional programme and its effective application to Ontario's war effort appears in this issue of Hydro News under the symbolic heading, "Hydro Builds For Victory".



Spanning the fast-flowing Ogoki River, the mighty main dam at Waboose rapids, shown above, has been completed. It has a crest length of 1,700 feet and a maximum height of 50 feet. Low points in the contour are closed by two adjacent auxiliary dams. Massive piers are embedded deeply in solid rock, and the sluiceways between the piers are mechanically operated to control the water level.

# HYDRO BUILDS FOR VICTORY

By Dr. Thomas H. Hogg, Chairman and Chief Engineer,  
The Hydro-Electric Power Commission of Ontario

**E**LECTRIC POWER is the life blood of modern war industry. Behind the construction of every plane, every ship, every tank and every instrument of war produced in Canada are the great hydro-electric power developments from coast to coast whose turbines and generators, ceaselessly turning, provide in ever-increasing quantities the essential ingredient common to all production of war equipment and supplies. In the province of Ontario, with its great concentration of war industries, Hydro power has been called upon to perform a Herculean task.



Dr. Hogg

To meet the greatly increased demands for power—and each year the war demands have been met in full—The Hydro-Electric Power Commission of Ontario undertook a large construction programme. New generating plants have been constructed in out-of-the-way river valleys, long transmission lines have been erected across difficult forested country, and transformer stations and other structures have been built or enlarged in all parts of the province to supply and deliver great quantities of new electric power.

From September, 1939 to the end of April, 1943 the Commission undertook 1,215 individual projects, as varied in size and character as the purposes they serve. Of this number 1,119, or approximately 92 per cent, of the projects undertaken are completed.

There follows a review of the major developments inaugurated by the Commission since the beginning of the war, with notations regarding the salient features of each undertaking.

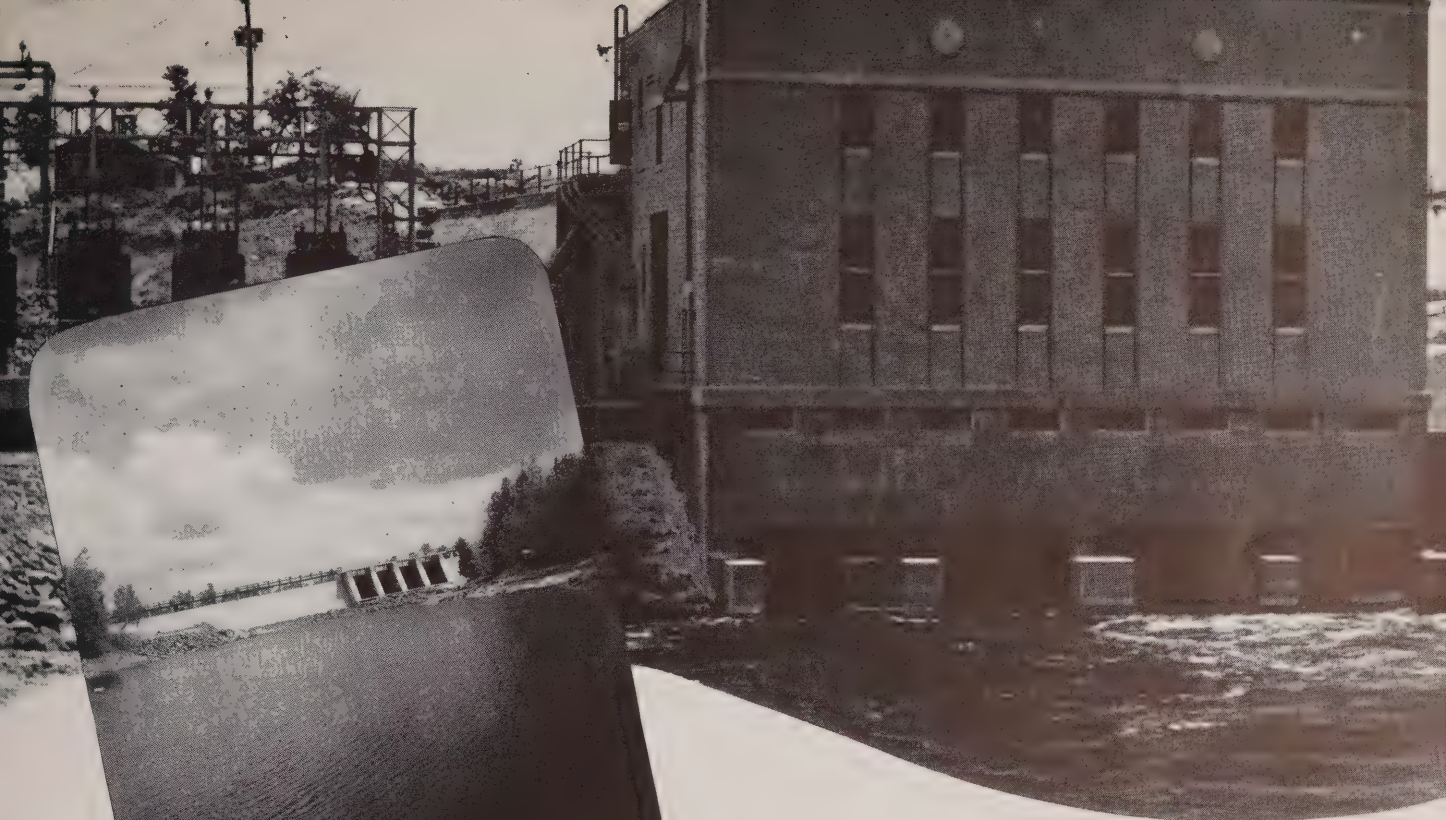
## GENERATING PLANTS

### Big Eddy — Muskoka River

This project, comprising two units with a total generating capacity of 9,500 horsepower at 60 cycles, was commenced in July, 1940. The first unit was ready to carry commercial load in October, 1941, while the second was ready for service a month later.

Situated on the Muskoka river about nine miles from Bala, the Big Eddy plant consists of a powerhouse and a main dam, 450 feet in length and 35 feet at greatest height, comprising a bulkhead section, and spillway crest, four sluiceways, and then another spillway section and bulkhead. Two smaller rockfill dams, with concrete-core walls, close depressions to the right of the intake canal. The canal has a width of 40 feet and a depth of 10 feet, and as it approaches the headworks these dimensions gradually change





Here is the Big Eddy development which was constructed at a cost of \$1,500,000. Operated from the control room in the Ragged Rapids plant, it is providing 9,500 horsepower for the Commission's Georgian Bay system. A view of the dam from the downstream pool is shown in the inset.

to a width of 45 feet and a depth of 15 feet.

The station is designed for supervisory control from the Ragged Rapids plant, and supplies power to essential war industries in the Georgian Bay system. When construction of the Big Eddy development was proceeding, an average of 128 men was engaged over a period of 25 months. Cost to date is \$1,300,000.

#### Barrett Chute—Madawaska River

Situated on the Madawaska river in eastern Ontario, eight miles southwest of Calabogie, the 54,000-horsepower Barrett Chute development was commenced in November, 1940, and went into service in August, 1942.

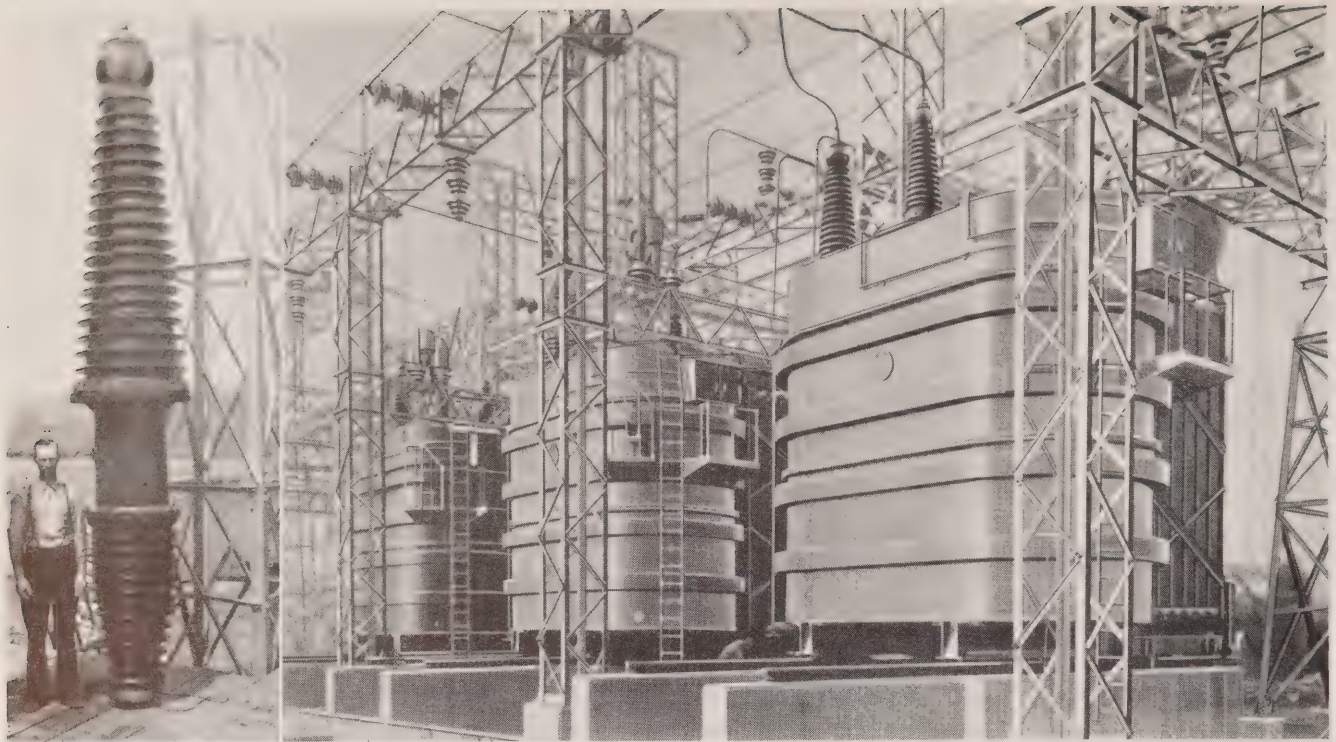
The project consists essentially of a powerhouse, feeder canal and main dam. Installed in the powerhouse are two units, each capable of generating 27,000 horsepower at 60 cycles. The main dam has a length of 1,100 feet and a maximum height of 97 feet. Eight sluiceways 16 feet wide discharge flood waters. The canal, 2,400 feet long, is cut through solid rock to the headworks. It is 38 feet wide, while the maximum height of cut is 78 feet. From the headworks at the north end of the canal, two steel penstocks, 549 feet long and 14 feet in diameter, carry water to the turbines.

A system of automatic frequency and load control interconnected with the plants at Chats Falls and the Gatineau Power Company, maintains constant frequency and a predetermined load balance. The 60-cycle power generated by the Barrett Chute plant is supplied to the Eastern Ontario system and, through connection to the frequency-changer



Completion last year of the new five-million dollar Barrett Chute power plant on the Madawaska river fed an additional 54,000 horsepower into Hydro's Eastern Ontario system. A front view of the plant, which houses two generators, is shown in this illustration.





This is a sectional view of Burlington high-tension station, showing one of the three banks of three single-phase 25,000 kv-a, 220/110/13-kv. transformers, each of which weighs approximately 225 tons. The transformers are 27 feet high, while the adjoining steel structure rises to a height of 52 feet. They are forced-air cooled units, with separate oil cooler. At the left is a close-up view of one of the 220-kv., oil-filled bushings used at this station, one per transformer. It is roughly 17 feet high, with a weight of 2700 pounds.

set at Chats Falls, power at 25 cycles can be transferred to the Niagara system.

Construction of this large development required the services of 300 men over a period of 28 months. Cost to date is \$4,500,000, and the final estimated cost \$4,600,000.

#### **Bark Lake Storage Dam — Madawaska River**

The scheme of power development on the Madawaska river includes a number of water storage projects. One of these, the Bark lake dam, was completed in the spring of 1942. Situated about one mile below the outlet of Bark lake and 65 miles upstream from Barrett Chute the earth-fill dam has a length of 980 feet and a maximum height of 68 feet. The concrete control section is fitted with 5 main sluices 16 feet wide with sills 20 feet below high water level. The dam creates a reservoir with a capacity of approximately 300,000 acre feet. Its cost to date, including cost for flooded land, is \$1,400,000. The final estimated cost is \$1,500,000.

#### **Ogoki River Diversion**

The Ogoki river diversion project was commenced in November, 1940, and completion of the undertaking is scheduled for July of this year.

The essentials of this development are: (1) a main dam on the Ogoki river at Waboose rapids which obstructs the normal flow of the river and backs it up to a level which permits it to flow southward to lake Nipigon through new channels and control structures; (2) a number of auxiliary dams, closing off low points through which the backed-up water might find its way; (3) the control works and channel at the height of land; and (4) a channel to lake Nipigon capable of carrying 10,000 cubic feet of water per second, and a new viaduct which had to be provided where the track of the Canadian National Railways crosses Jackfish creek.

This diversion will make possible the development of

360,000 additional horsepower at various developed and undeveloped sites between lake Nipigon and the mouth of the St. Lawrence river.

An average of 461 men has been employed on the project for a period of 29 months. Cost to date is \$4,500,000. Final cost will total \$5,100,000.

#### **DeCew Falls Development**

Another important development now nearing completion is the new DeCew Falls generating plant, where ground was first broken in October, 1941. It is expected that the initial power from this development will be delivered during this summer.

Situated at Twelve Mile creek near St. Catharines, the DeCew Falls plant will make available an additional 65,000 horsepower of 25-cycle power for the Niagara system. The installation at present being constructed includes a powerhouse containing a single-runner Francis turbine, turning a 48,000 kv-a. generator; a penstock 16½ feet in diameter encased in concrete; a headrace canal, 2,000 feet long, excavated from solid rock; and many other individual structures.

Construction work on this undertaking has required an average of 360 men over a period of 19 months. Cost to date \$3,700,000. Final cost will total about \$6,100,000.

#### **Ear Falls Development—Northern Ontario**

Early in the war a third generating unit was installed at the Ear Falls generating station in Northern Ontario. This 6,000 kv-a. generator was placed in service January 4, 1940 and involved the expenditure of \$680,000.

#### **TRANSFORMER STATIONS**

##### **Burlington Transformer Station**

Work was started in October, 1940, on a second 220,000-



volt terminal station at Burlington near Hamilton. This station augments the existing Toronto-Leaside terminal in transforming 220,000-volt power transmitted from the Commission's eastern sources of supply.

Work at this point consists of the installation of three banks of transformers with a total capacity of 225,000 kv-a., the transformation being from 220,000 to 110,000 volts; the erection of switching equipment for two 220,000-volt incoming lines and eight 110,000-volt outgoing feeders; three 13,000-volt, 40,000-kv-a. synchronous condensers; oil handling equipment consisting of storage tanks, filtering and pumping equipment, and control and relaying equipment located in the control building and the 220,000-volt and 110,000-volt relay buildings.

The three banks of transformers, rated normally at about 300,000 horsepower, are now in service, and the control building is nearing completion. The work yet to be completed includes the installation of the permanent control panels and equipment and the installation and placing in service of the synchronous condensers.

A crew averaging 100 men has been employed on this station construction for some 31 months. Cost to date is \$4,850,000. Final cost will total about \$6,430,000.

#### Hamilton Gage Transformer Station

Construction of this station at Burlington street and Gage avenue, in Hamilton, commenced in May, 1940, and completion is scheduled for June of this year. Its primary purpose will be the supply of power to the steel companies of the city of Hamilton.

The work being undertaken here consists of the installation of three 25,000-kv-a. transformers (transformation being from 110,000 to 13,000 volts); switching equipment for two 110,000-volt incoming lines and eight 13,000-volt

outgoing feeders; meters, relays and control equipment for the control of the station from Hamilton Beach transformer station.

Two transformers were placed in service during 1940 with temporary control and relay panels, housed in a temporary control building. The new control building is now completed; the installation of the permanent control panels will be completed this month; and the third transformer will then be placed in service. Cost to date is \$570,000.

#### Atlas Steel Transformer Station

Commenced in November, 1940, this station is expected to see final completion in July of this year. It is situated in Welland, adjacent to the Atlas Steel Company plant which it has supplied with power since March, 1941.

Work at this point involves the installation of two 25,000-kv-a. transformers (transformation being from 110,000 to 26,000 volts), with switching and supervisory control equipment designed for control from the Crowland transformer station.

One transformer was placed in service during March, 1941, and the second unit in March, 1942. Cost to date is \$310,000.

#### Crowland Transformer Station

The new Crowland station was started in January, 1941, and completion is scheduled for August, 1943. Situated in the Township of Crowland, south of Welland, it will supply power to customers in the Welland district.

The main features of this station are four 25,000-kv-a. transformers (for transformation from 110,000 to 26,000 volts); switching and control equipment, including facilities for supervisory control of the Atlas Steel transformer station described above.

Two transformer banks were placed in service in June,

One of the major projects involved in the Ogoki diversion scheme, which will be completed this summer, is the construction of a new railway bridge at Jackfish Crossing to take care of the increased flow of water. The illustration below, gives an impression of the operations at the new structure.



1941, and a third in August of the same year. On March 22 of this year the fourth bank came into service. Cost to date is \$625,000.

#### **Toronto Fairbank Transformer Station**

In February, 1940, the Toronto Fairbank transformer station was started and completed a year later. The work consisted of the installation of two 25,000-kv-a. transformers and switching equipment for two 110,000-volt lines and six 26,400-volt feeders. The total cost was \$550,000.

#### **Toronto Esplanade Transformer Station**

Toronto Esplanade transformer station was started May, 1941, and consisted of the installation of two 25,000-kv-a. transformers and switching equipment for two 110,000-volt lines and four 13,200-volt feeders, also control equipment for the control of the station from Leaside or Strachan avenue stations. Placed in service in March, 1942, it involved the expenditure of \$510,000.

#### **Chats Falls Transformer Station**

An addition to Chats Falls transformer station, started in March, 1942, consists of the installation of a bank of three 15,700-kv-a. transformers (transformation being from 13,200 to 220,000 volts) with associated switching equipment to supply the output of the frequency-changer to the 25-cycle Niagara system; three new 220,000-volt circuit-breakers have also been installed for greater control of the 220,000-volt transmission lines. It is expected the new transformer bank will be placed in service early in June. The cost of this work to date is \$530,000.

#### **Toronto Power Transformer Station**

Work on new equipment and changes at the Toronto Power transformer station started in October, 1941, and consists of the permanent installation of three 16,000-kv-a. transformers which had previously been in service under temporary conditions. Expenditures to date amount to \$497,000.

#### **Hanover Frequency Changer Station**

An addition to the Hanover frequency-changer station was started in January, 1940, and involved the installation of a second 5,000-kv-a frequency-changer and associated equipment. It was completed in February, 1941 at a total expenditure of \$300,000.

#### **Toronto Leaside Transformer Station**

Work on additional equipment at Toronto Leaside transformer station was started in October, 1940, and consisted of the installation of the necessary equipment for the control and protection of a fourth 220,000-volt circuit; also the modernization of the protective relaying of the three existing 220,000-volt lines. It involved the expenditure of \$252,000.

#### **Transmission and Distribution Lines**

Since the outbreak of war, the following major transmission lines have been erected to carry vast amounts of electric power across various areas of the Province for use in the war effort.

From the interprovincial Ontario-Quebec border (at Baudet) to Leaside transformer station; 281 miles of 220,000-volt single-circuit, steel tower line. Started May, 1940, and completed March, 1941, it required an average of 522 men for a period of 11 months. Cost to date is \$3,420,000.

From Leaside junction to Burlington transformer station: 45 miles of 220,000-volt, double-circuit, steel tower line. It was started in February, 1941, and completed in August, 1941; requiring an average of 169 men for seven months. Cost to date is \$1,680,000.

From St. Thomas transformer station to Essex transformer station; 103 miles of 110,000-volt, single-circuit steel tower line; started January, 1940, finished July, 1940, requiring an average of 200 men. Cost \$715,000.

From Chats Falls to Ottawa: 30 miles of 110,000-volt, single-circuit, wood-pole line. Started December, 1939; completed May, 1940; requiring an average of 66 men for five months. Cost \$195,000.

From the vicinity of Ottawa City to Cumberland Junction: the construction of 15 miles of 110,000-volt, single-circuit twin-pole line was started July, 1940, and finished the following month, requiring an average of 90 men for that period. Cost \$98,000.

From Frontenac transformer station to Sidney transformer station: 57 miles of 110,000-volt, single-circuit, steel-tower line. Started April, 1940; completed October, 1940; requiring an average of 91 men for seven months. Cost \$380,000.

From Ragged Rapids generating station to Canadian Industries Limited, Nobel: 42.5 miles of 38,000-volt wood-pole line. Started March, 1940; completed July, 1940; requiring an average of 159 men for four months. The cost of this work, \$225,000, was paid by Canadian Industries, Limited.

From Shining Tree transformer station to Jerome Gold Mines: 42 miles of 26,400-volt, single-circuit, wishbone type, wood-pole line. Started December, 1940; completed May, 1941; requiring an average of 173 men for a period of five months. Cost \$425,000.

From Uchi switching station to Jason Gold Mines; 41.5 miles of 44,000-volt, single-circuit, wishbone type, wood-pole line. Started January, 1940; completed March, 1940; requiring an average crew of 271 men for three months. Cost \$250,000.

From Port Arthur transformer station to Moose Lake station (Steep Rock): 120 miles of 110,000-volt, single-circuit, twin-pole line. Started May, 1943; estimated completion date, November, 1943. Cost to date \$40,000. Final cost will total about \$1,520,000.

In order to increase the efficiency of transmission and distribution of power in the Georgian Bay system, the voltage on the main transmission line was raised from 26,000 to 38,000 volts. The expenditure involved in this important improvement was \$521,000.

#### **MISCELLANEOUS**

Early in the war the Commission completed its head office building in Toronto in order to consolidate its staff for the more efficient conduct of its operating and administrative functions. The total cost of the extension was \$1,316,000.

The Commission has co-operated in Canada's air training plan by providing electrical service without delay to airports and for certain defence industries. It has also carried out construction work in connection with the physical protection of its properties. Expenditures in these connections have totalled between \$2,500,000. and \$3,000,000.

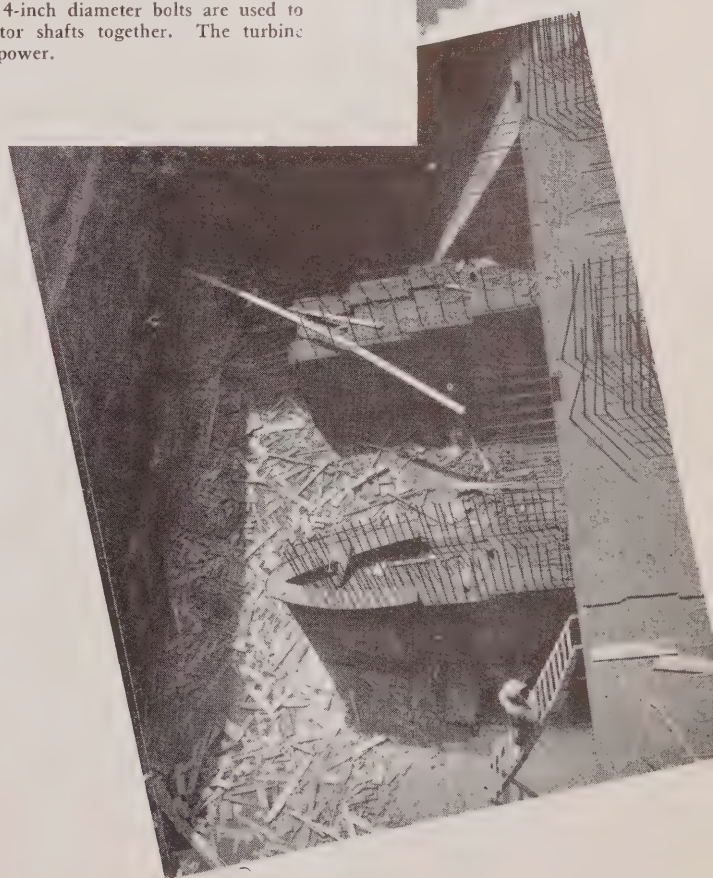
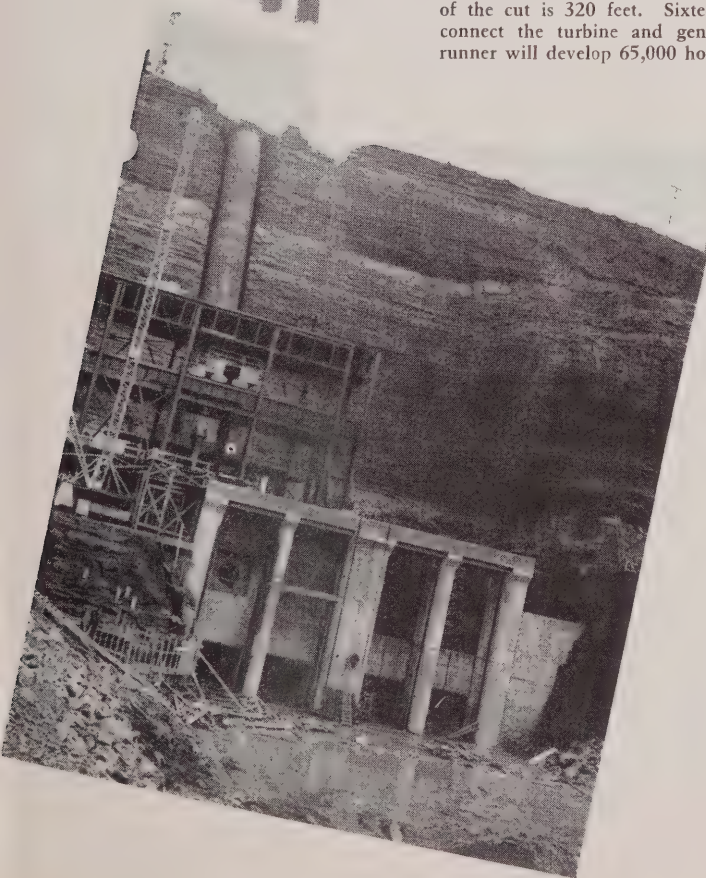
The foregoing is a brief summary of the Commission's major construction operations which have involved expenditures aggregating about \$37,000,000. Most of these expenditures were directly attributable to the essential task of providing and distributing power and electrical service for war purposes. In addition to the main projects outlined  
*(Continued on page 19)*





### VIEWS AT DECEW

HERE are a few of the latest photographs taken at the site of the new six-million dollar DeCew power development which will be completed this summer. They give a general impression of the power house substructure and steel superstructure, including the 280-ton travelling crane and steel penstock which has a diameter of  $16\frac{1}{2}$  feet. From the base of the concrete to the top of the cut is 320 feet. Sixteen 4-inch diameter bolts are used to connect the turbine and generator shafts together. The turbine runner will develop 65,000 horsepower.





## Town Of Aurora Takes Over Operation Of Hydro System

**Signs Contract With H.E.P.C. And Moves Into New Building — Has Purchased Hydro Power Since 1913**

**A**N important event was chronicled in the history of Aurora recently when F. R. Underhill and C. A. Willis, mayor and municipal clerk respectively, signed a contract with the H.E.P.C. to take over the operation of the local Hydro system. A commission will be set up in the near future.

Meanwhile the offices of the public utilities services and the town clerk's office are being established in new premises on the main street, a short distance north of the building which has been occupied for many years.

The town, which has one distribution station, has been purchasing Hydro power since April, 1913, under an old Toronto-York Radial contract which was taken over a number of years ago by the H.E.P.C. The present power load runs between 1,200 and 1,300 horsepower, while the population is now 2,900.

Under the old agreement the maximum of power to be supplied was limited to 1,000 horsepower. The new agreement, however, will provide an unlimited amount of power.

The Electric Light and Power Committee comprises Ross Linton, chairman; deputy reeve Charles E. Sparks, A. Nixon Fisher and mayor F. R. Underhill, while other members of the town council are reeve Charles A. Malloy, Dr. G. A. C. Gunton, A. A. Cook and Fred Rowland.

In Aurora at present there are 740 domestic, 100 commercial and 10 industrial consumers of electricity and the principal industries, now largely engaged in war work, include the Collis Leather Co., Ltd., the Sisman Shoe Co., Ltd., Factory Equipment Ltd., Aurora Flour and Feed Mills Ltd., and the Aurora Building Co. In addition, the second largest ordnance depot in Canada is located at Aurora.

When in the town recently, Hydro News met the members of the Electric Light and Power Committee and learned that the chairman, Mr. Linton, who is manager of the Sisman Shoe Company, has served on council and headed the utility committee for the past five years. An enthusiastic supporter of public ownership and known for his enterprise in both business and public life, Mr. Linton was born near Aurora and is of U.E.L. stock.

Commenting upon Aurora's action in taking over the operation of its own Hydro system, mayor Frank Underhill told Hydro News that he thought it was the best thing they could do. Mr. Underhill has been chief magistrate for the past two years and, previously, had served on the board of education, while he has been associated with the local board of trade since its inauguration. Before going overseas with the Canadian Engineers in the last war, he was engaged in the banking business for five years, while he is now in the real estate, investment and insurance business. A native of Pickering, mayor Underhill confesses that he is interested in the Royal and Ancient Game and in fishing when he can get the time.

Charles E. Sparks, the deputy reeve, has had considerable experience as a farmer, school teacher and in

public life, while he has been in the dairy business in Aurora since 1934. He served on the council for three years and was elected deputy reeve five years ago. Born in the township of Dawn near Dresden, Mr. Sparks recalls that he was paid \$400 a year as principal of Hunter's Corners School! In 1904 he was elected to the Beverley township council and served for ten years, while he was also a member of the Wentworth county council.

Born in Dufferin county, A. Nixon Fisher has been in Aurora for ten years and for the past several years has served on both the council and the board of trade being president of the latter. In business life, Mr. Fisher operates four department stores, while he is keenly interested in church and Sunday school work.

A native son of Aurora, Mr. Willis was engaged in the leather business for nearly twenty years, and in 1939 he was appointed clerk and treasurer of the municipality. Known as a fine vocalist, Mr. Willis is a member of the choir of the United Church where his wife is organist. He told Hydro News that the church was erected in 1878 and that he had been in the choir since he was a boy of sixteen.

## VICTORY GARDEN DRIVE

By A. W. S. SMITH

Chairman, Campaign Committee.

**H**HEAD office and field employees are responding with keen enthusiasm to the Ontario Hydro-Electric Club's drive for 800 victory gardeners and, to date over 80 per cent of the objective has been attained.



Adam Smith

It is estimated that with a yield of 200 lbs. of vegetables per garden, about 80 tons of essential produce will be made available for Hydro tables. This production, along with the vegetables which will be grown by victory gardeners everywhere, will help ease the serious shortage anticipated this year.

Several committees are at work providing vital information to the Commission's victory gardeners.

The garden culture committee have prepared and issued a special folder covering garden planning, planting and cultivation. This folder will also contain important information on the use of garden fertilization, insect and pest control, canning and storage of vegetables.

Statistical and allotment committees are registering all applicants and, where necessary, arranging for the use of vacant property for those who have no garden space of their own.

The purchasing committee handle all orders for seeds and supplies and make arrangements for ploughing and cultivation services.

The ladies' committee is planning demonstrations on the preparation of vegetable dishes and the preserving of vegetables for winter months.

To stimulate interest in the campaign, prizes will be awarded for the best vegetable garden plan, the best vegetable garden and the best kept records.

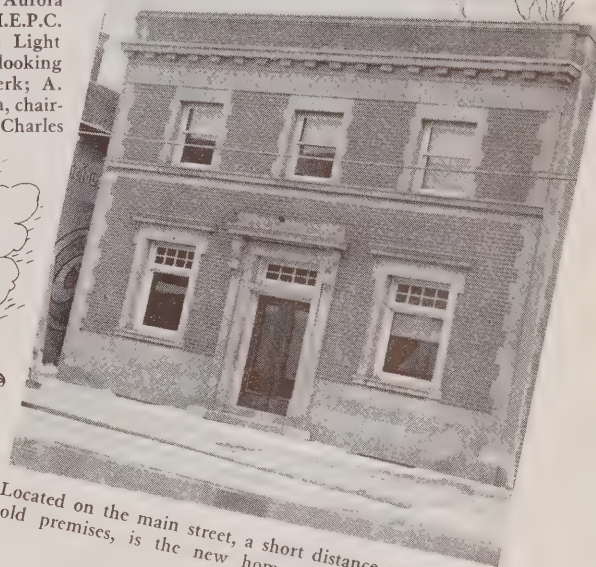




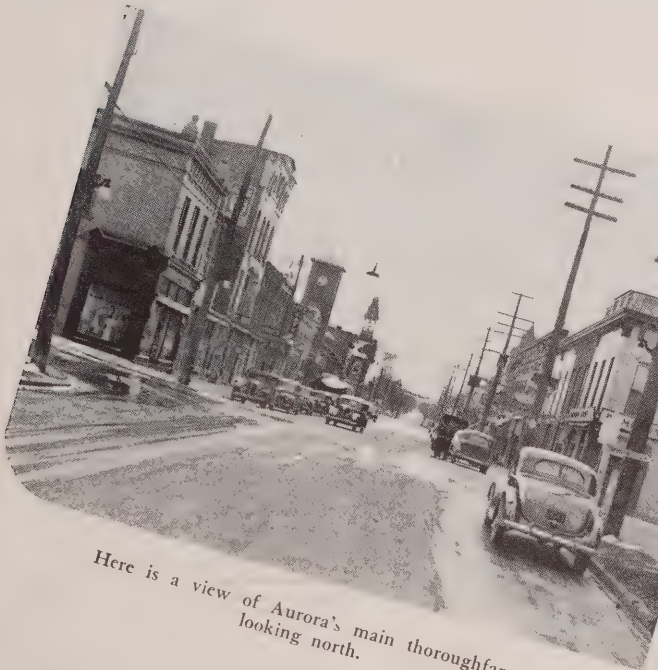
Mayor F. R. Underhill of Aurora signs the contract with H.E.P.C. Members of the Electric Light and Power Committee, looking on, are C. A. Willis, clerk; A. Nixon Fisher, Ross Linton, chairman, and deputy reeve Charles E. Sparks.



Here is the old building—a landmark of Aurora—which was used until recently to house the utilities' and town clerk's offices.



Located on the main street, a short distance north of the old premises, is the new home of the Aurora utility services.



Here is a view of Aurora's main thoroughfare, looking north.



This is the distribution station located on the main street.





Scenes such as the one shown here were witnessed in Hydro municipalities throughout Ontario as the results of the electrical appliance survey were tabulated. Designed to assist Hydro and government officials in providing an adequate supply of repair parts and materials which will assure continued maintenance of electrical equipment, the survey represents an important contribution to Canada's war effort.

**ON DUTY FOR THE**

**APPLIANCE SURVEY**

**ELECTRIC APPLIANCE SURVEY SUMMARY**

**ELECTRICAL APPLIANCE SURVEY**

**Dear Consumer,**

With the majority of Canada's metal resources being required for War materials, it is reasonable that less and less will be allotted for Domestic uses. In order that we may make the least possible demand on these resources, it is recommended that Electrical Appliances be repaired where possible, rather than replaced with new. In this way less of the materials vital to War Services will be diverted.

We ask your co-operation in order that we may assist the Dominion Government in making provisions for service parts to maintain in operation the Electrical Appliances in your home. Please complete the Questionnaire on the reverse side and return it to the Hydro Office when you pay your bill.

The War must be won and no effort is too small. Filling out this form will have no effect on the quality or cost of your service (over)

Illustrated on these pages are the questionnaire cards, tabulation sheets and some of the advertisements which were used in enlisting what proved to be ready and spontaneous co-operation on the part of electrical consumers across the province. To get the cards into the hands of consumers the successful and economical method of affixing them to lighting bills was adopted.

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**KITCHENER  
PUBLIC UTILITIES COMMISSION**

**KITCHENER  
PUBLIC UTILITIES COMMISSION**

**Do Not Fail To**  
**IN YOUR HYDRO SURVEY CARD**

[illegible]

Canada Is In Need  
Of The Information  
These Cards Will Give!

Only your complete co-operation will enable us to give the Government the statistics it requires to set manufacturing quotas for a sufficient number of repair parts for essential maintenance of your electrical appliances.

Please Return  
Your Card Promptly

in order that we may complete the job as quickly and inexpensively as possible.

**HYDRO DIVISION**  
WINDSOR UTILITIES COMMISSION

148 Chatham W.

# DURATION!

**Sales Promotion Department H.E.P.C.**

A black and white portrait of a middle-aged man with glasses, wearing a dark suit, white shirt, and a patterned tie. He is looking directly at the camera with a neutral expression. The background is a light, textured gray.

I. Blav

a result, instructions were issued to industry to reduce, or stop entirely, the production of new electrical home appliances. This limited the amount of new merchandise, making it necessary that steps be taken to assure a supply of repair parts for the appliances already in use.

A problem of some magnitude then confronted all concerned because the acceptance of electrical appliances

**COOPERATION OF ALL HYDRO**  
**CUSTOMERS REQUESTED**

MR. JOHN DOE  
1443 DOVERCOURT RD.  
TORONTO, ONT.

We ask your cooperation in order that we may assist the Democratic Government in making provisions for service units to members of the Armed Forces. Applications to your local Planning Commission for the Quota should be on the reverse side and return it to the Hydro-Cities where you just your bill.

This may seem to be a small effort at first. Filling out the form will have as much an effect as most of your letters.

- Attached to Hydro bills now being sent out Hydro residential customers will find a questionnaire card similar to the illustration shown on the left. The card attached to the bill should be filled out as accurately as possible and LEFT attached when the bill is paid in the regular way.

## What does it all mean?

It simply means that the Toronto Hydro-Electric Commission is cooperating with Ontario and other Provincial Power Commissions throughout the Province to secure the formation of a new authority to supply the public. In view of the fact that the public is not in a position to supply the power which consumers are used to obtaining from the various municipalities, it is deemed proper to require that the new authority should be empowered to issue bonds to provide for the purchase of the necessary plant and parts for electrical appliances and the replacement of materials and the materials should be allocated for that purpose.

With the whole hearted cooperation of all Hydro customers in the matter of assisting out this questionnaire, considerable progress will be rendered in the work of keeping electrical appliances in proper order.

the measure

In the meantime, we strongly recommend that you completely check up on Hydro. The household in Toronto and every other city in the country that needs repairs are necessary have them done NOW, even if it is to be on the safe side. Most electricians are equipped to give repair service at reasonable rates.

Remember, too, that in many cases, it is not impossible for an electrical dealer to supply you with a replacement part such as an element for your water heater or a switch for your iron or toaster unless you turn in the old part, but you will be in tears must pass to the manufacturer. Be sure there must pass to save the worn-out parts until you know whether they are needed in order to have repairs made.

Remember too, that in many cases, it is now impossible for an electrical dealer to supply you with a replacement part, such as an element for your range or a handle for your iron or toaster unless you turn in the old part, which he in turn must pass back to the manufacturer. Be sure therefore to save the worn-out parts until you know whether they are needed in order to have repairs made.

**Attention**  
**HYDRO**  
**CONSUMERS!**

—WE ASK YOUR CO-OPERATION  
IN THIS IMPORTANT—

## ELECTRICAL APPLIANCE SURVEY

With the majority of Canada's metal resources being required for war materials, it is reasonable that less and less will be allotted for domestic use. In order that we may make the least possible demand on these resources it is recommended that electronic appliances be repaired where possible rather than replaced with new. In this way some of the materials vital to war services will be diverted

### During the Next 30 Days - - -

—each Hydro consumer will receive a questionnaire along with his or her Hydro account. We ask your co-operation in filling in this card indicating the various electrical appliances in use in your home. Please complete the questionnaire and return it to the Hydro office when you pay your bill.

Office closed  
Monday, June 8,  
in observance of  
the  
King's Birthday.

The war must be won and a small, filling out the qu have no effect on the qual service

Public Utilities C  
474 Teluk Anson Road, Singapore 109451  
Tel: 434 2222 Fax: 434 2223  
E-mail: [info@publicutilities.com.sg](mailto:info@publicutilities.com.sg)  
Website: [www.publicutilities.com.sg](http://www.publicutilities.com.sg)

474 Yelhet Samet

**IMPORTANT NOTICE  
TO ALL  
HYDRO USERS  
IN LONDON**

Dear Con

**Consumer:** The majority of Canada's small businesses are owned by Canadians. The Government of Canada is committed to supporting these businesses and to ensuring that they are able to compete in the marketplace. The Government is also committed to ensuring that the needs of small businesses are taken into account in the development of government policy.

TRICAL APPLI  
ELECTR

PLE

**ELECTRICAL APPLIANCE SURVEY**  
 Check (✓) Electrical Appliances in Your Home

APPLIANCES IN USE		APPLIANCES IN USE BUT NOT WORKING		APPLIANCES NOT IN USE	
YES	NO	YES	NO	YES	NO
<input type="checkbox"/> Electric Kettle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Electric Fan	<input type="checkbox"/>
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THE PUBLIC UTILITIES COMMISSION  
DUBLIN AT WELLINGTON ST.

in Ontario has been comparatively high, resulting largely from the low, graduated Hydro rates. As an example, the saturation of electric ranges is 29.7 per cent refrigerators 39 per cent washers 64 per cent, toasters 78.4 per cent and irons 100.1 per cent. In actual installations this represents thousands upon thousands of electrical appliances of all types. The extraordinary situation that then had to be considered was that of keeping this tremendous amount of equipment already connected in the homes in Ontario, "on duty for the duration."

#### Close Estimate Required

The replacement parts used to repair electrical appliances are also made largely of scarce materials. For this reason, provision for the continued maintenance of this equipment was not easy of solution. In order that satisfactory arrangements could be made to assist in providing an adequate supply of repair parts, it became necessary to confer with various departments of the Dominion Government so that the materials required would be made available. It became evident, after discussions with the government officials, that a reasonably close estimate would be needed by those in Ottawa responsible for releasing the metals, before final arrangements could be completed, so that the waste of time and essential materials would be minimized. This information was not readily available to the degree of accuracy required. After deliberation on the part of all concerned, it was decided that a survey would

provide the most satisfactory method of obtaining the data needed.

A suitable questionnaire card was developed, listing the majority of electrical appliances manufactured. This card was then supplied to the municipalities in sufficient quantities for distribution to all domestic consumers. The most successful and economical method used to circulate the questionnaire cards was by affixing them to the customers' lighting bills. In most instances, the cards remained attached and were returned when the bills were paid. Many municipalities enlisted the support of the consumers through advertising in the newspapers and with suitable window displays, explaining to their customers the need for completing the card. A great number of the local utilities also carried on a "Care Adds Wear" campaign at the same time as the appliance survey was being taken, stressing the additional wear that might be expected from electrical equipment if care is exercised in its operation.

The splendid co-operation of Hydro users was a contributing factor to the success of this activity, as indicated by the results. The returns were very gratifying, averaging approximately 85 per cent throughout the Province, 286 municipalities took part in this important activity and a total in excess of 560,000 questionnaire cards were distributed. The following comments, submitted by municipal managers with their returns, provide evidence of the appreciation of the results of this program.

"Returns 96 per cent—this is the most thorough inventory we have been able to obtain. Previous inventories have not responded more than 65 to 75 per cent.

"Average of 90 per cent returned. The co-operation received from the consumer was excellent.

"In our municipality 86 per cent filled in the cards."

The foregoing are only a few of the comments taken from the Summary Sheets returned by the municipalities.

#### Figures Show Over-All Picture

The electrical appliances installed in the homes of Ontario provided a high standard of living in the days preceding this great global conflict. At present, they are contributing to a more effective conduct of our war effort because of the time and labour they save in the home. True, they now must be used conservatively so that our industries may have all the power they need to produce the tools for our fighting men, but when the day of peace again arrives, new and undreamed of uses for electricity in the home will provide an even "better way of living."

The table accompanying this article indicates very clearly the total number of various appliances in use in the homes of Hydro consumers. The figures listed reflect the over-all picture in the Province in respect to the many appliances now installed. The individual utilities have also been provided with statistics showing the number of appliances in use in each municipality. This information will unquestionably be helpful in solving local problems that may arise as a result of changing conditions.

The statistics procured as a result of this wartime electrical appliance survey are of inestimable value, not only during the present critical period, but will also be of great assistance in the future as, due to Government regulations, the appliance market is in a rather static condition and it is very unlikely that there will be much change in the figures obtained until after the war is concluded.

APPLIANCES	NO. IN USE IN ONTARIO	SATURATION PER CENT
AIR HEATERS	62,383	11.1
CLOCKS	224,118	39.9
COFFEE MAKERS	48,267	8.6
FANS	63,204	11.3
ROASTERS	7,137	1.3
FURNACE BLOWERS	48,791	8.7
GRATES	50,619	9.0
GRILLS—SANDWICH	95,082	16.9
HAIR CURLERS	25,224	4.5
HAIR DRYERS	4,998	0.9
HOT PLATES	54,148	9.7
HUMIDIFIERS	10,202	1.8
IRONS	561,912	100.1
IRONING MACHINES	19,685	3.5
KETTLES	7,199	1.3
MIXERS	33,374	5.9
OIL BURNERS	13,547	2.4
PERCOLATORS	47,960	8.5
RADIOS	577,309	102.8
RAZORS	43,127	7.7
RANGES	166,498	29.7
RANGETTES	37,112	6.6
REFRIGERATORS	218,922	39.0
SUN LAMPS	12,563	2.2
TOASTERS	439,971	78.4
VAC.—FLOOR MODEL	213,032	37.9
VAC.—HAND MODEL	57,035	10.2
WAFFLE IRONS	31,568	5.6
WARMING PADS	90,105	16.1
WASHERS	359,428	64.0
WATER HEATERS—Metered	74,695	13.3
WATER HEATERS—Flat Rates	75,241	13.4
No. of Consumers	561,382	



# A Call at St. Kitts.



Shown above is the Municipal Building at St. Catharines. Right: Gordon L. MacFarlane, superintendent, (standing) and P. B. Yates, manager, St. Catharines Public Utilities Commission.



**R**ICHLY endowed by nature and animated by a spirit of progressive civic enterprise, St. Catharines has attained a proud and picturesque distinction among Canadian cities from coast to coast.

It is "The Garden City of Canada."

But St. Kitts can claim many other distinctions. For one thing, it is located in a district which is the chief source of Hydro power in Ontario and which has pioneered the generation of electricity.

This centre of "Blossom Time," fine homes, pleasant avenues and friendly and industrious people first experienced the benefits of electricity in 1886. One year later St. Catharines was operating one of the earliest electric trolley systems on the North American Continent!

## Symbolizes Growth of Hydro

These interesting facts were mentioned by P. B. Yates, manager of the city's Public Utilities Commission, who was interviewed by *HYDRO NEWS* recently. When the visitor meets Mr. Yates he discovers a man who, by virtue of his background of thirty-five years of continuous Hydro service (five with the H.E.P.C. and thirty as manager of the St. Catharines' utilities) symbolizes the growth of Hydro in that community. Among his "souvenirs" are a number of interesting historical records which provide data on the early days of electric service in St. Catharines.

It appears that the city received its first power from the St. Catharines Electric Company and that it was generated at a small hydraulic development at Lock 5 on what is now known as the old Welland canal. That power (in 1886) was originally sold to business premises but soon gas lights on the streets were being replaced by electric lights.

Records also show that the Cooke Electric later established a combined steam and hydraulic development at Lock 3 of the old canal. In 1900, with the amalgamation of the St. Catharines and Cooke companies, a man by the name of John Knox organized the Lincoln Light and Power Company.

Within the next three years a rapid expansion in the electric system coincided with demands for additional power that was supplied by the Hamilton Cataract Power, Light and Traction Company which, by that time, had commenced generating 66⅔-cycle power at DeCew Falls to provide service for Hamilton. One year later, in 1904, the Lincoln Company was sold to the Hamilton Cataract organization and, under new management, the use of elec-





Here are the members of the St. Catharines Public Utilities Commission. They are, from left to right, mayor Charles Daley, Dr. W. J. Chapman, Harry A. Collins, chairman; Col. F. C. McCordick, W. B. Elliott and P. B. Yates, Manager.

The photographer was coming upstairs. Eileen Dixon and Vera Baumann, two members of the staff of the St. Catharines Public Utilities Commission, are going to lunch. The result is shown below.



This is the main office of the St. Catharines Public Utilities Commission. In the group are Ethel Crawford, Eleanor Pennington, Frances Caton, Betty Baker, Helen Kennedy, Sheila McCabe, A. J. Whitlock, R. A. Hare and P. B. Yates.

tricity in St. Catharines was greatly expanded.

In 1910, according to the records, the Ontario Power Company reached into St. Catharines but served only industrial consumers. Three years later, lack of sufficient power required by a new industry hastened the formation of a public utilities commission.

#### Commission Formed In 1914

Mr. Yates, who was head of the municipal department of the H.E.P.C. at that time, recalls that the late Sir Adam Beck told a delegation from St. Catharines that if they would undertake to pass a Hydro bylaw at the next election the H.E.P.C. would take the contract with the new industry and turn it over to St. Catharines after the bylaw had been passed.

As a result, on January 1, 1914, the bylaw was passed, a public utilities commission was formed, the facilities of the Ontario Power Company were taken over and Mr. Yates accepted the invitation to become manager of the utilities. And so on March 23, 1914, he arrived at St. Catharines to commence his new duties.

When the local commission took over the operation of the utilities the St. Catharines' load was 1,000 horsepower; in 1939 it was 15,500 horsepower and today it is approximately 30,000 horsepower. At present there are 9,684 consumers, comprising 8,459 domestic, 1,023 commercial and 202 industrial consumers.

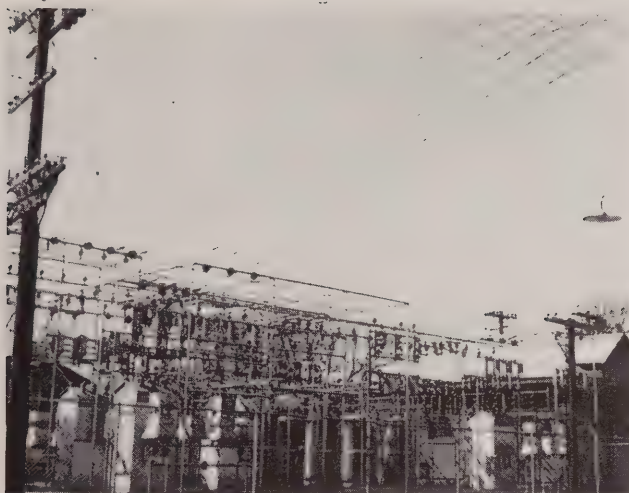


Meet R. A. Hare. He is assistant to Gordon L. MacFarlane, superintendent, and P. B. Yates, manager of the St. Catharines P.U.C.





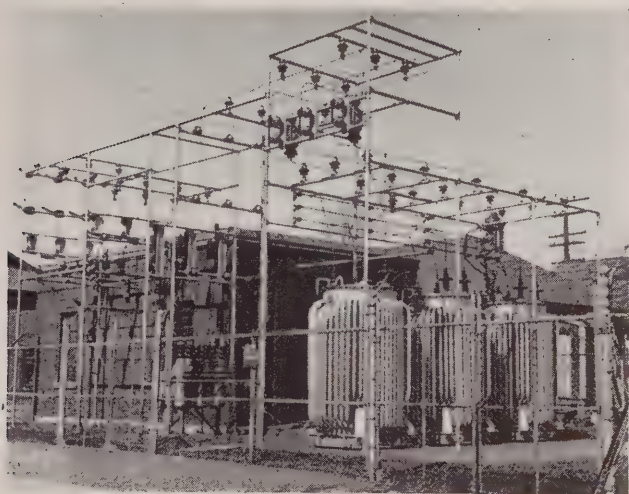
## HYDRO SUBSTATIONS AT ST. CATHARINES



VINE STREET



BURGOYNE



TAYLOR AVENUE



60-CYCLE SUBSTATION AT LOCK 3

Heading the list as the largest consumer is the McKinnon Industries plant which uses 12,500 horsepower.

The fact that St. Catharines is the home of many flourishing and diversified industries reflects the enterprise of leading citizens who, through a period of nearly seventy years, have devoted their time and efforts to the securing and developing of manufacturing plants. As a result, more and more people have been attracted to this centre where approximately one-third of the population is now engaged directly in war work. In 1914, when the Public Utilities Commission was formed, the population was approximately 1,600; in 1939 it was 27,647 and today it is 32,559.

The history of this progressive centre of industry and garden land dates back 150 years—to the latter part of the 18th century—when two members of a hardy band of United Empire Loyalists and their families ventured twelve miles inland from the Niagara river, established farms on Crown land and became the first settlers on what is now the City of St. Catharines.

It was in 1845 the Village of St. Catharines was incorporated as a town, and it is exactly 67 years ago since

it was incorporated as a city, while it is also the County Seat for the County of Lincoln.

### Spirit of Civic Pride

The imposing municipal building which houses all the public services, including the Public Utilities Commission, stands as a monument to the spirit of civic pride which is an outstanding characteristic of this Ontario municipality. The old building at the corner of James and Church Streets was demolished and the new, spacious, two-storey structure, fronting on Church Street, was erected on the new site at a cost of \$155,000 exclusive of furnishings. It was officially opened on August 9, 1937.

St. Catharines' reputation as "The Garden City of Canada," was not built upon the abundant natural beauty of the district alone; it is, in the main, the result of an 18-year programme of parks planning and beautification directed by the Board of Park Management. This board came into being some twenty years ago largely through the efforts of the late W. B. Burgoyne and Major E. H. Lancaster, K.C., supported by other public-spirited citizens.

*(Continued on page 20)*



**I**N time of war, rationing is the intelligent and democratic way of assuring equitable treatment for all and an adequate supply of essential foods for both the home front and the battlefield. Meat is the latest item to come under the axe, and from now until further notice every man, woman and child in Canada will be allowed an average of two pounds of meat per week; this means "bone-in weight." Rationed meats are being divided into four groups:

- A. Those cooked meats rationed at  $\frac{1}{2}$  lb. per coupon:
- B. Those meats at  $\frac{3}{4}$  lb. per coupon:
- C. Those at 1 lb. per coupon:
- D. Those at  $1\frac{1}{4}$  lbs. per Coupon.



Edithemma Muir

Cuts having more than 50 per cent bone content are not rationed. Other

items which are not rationed include liver, heart, tongue, sweetbreads, kidneys, tripe, brains, tails, poultry, fish, eggs and cheese.

Just look over the meat rations of other countries and

you won't feel too badly. Canada and United States have the largest meat ration of all. Britain has 26 ounces (with fish, poultry, eggs and cheese rationed) as against our 32 ounces. The Russians, fighting so valiantly in the cause of freedom, get a meagre 16 ounces per week, while the victims of Germany come in order . . . France 3 ounces, Norway 1 ounce. Poland and Greece none at all.

Then think of the foods we have in plenty to supplement the generous 32-ounce ration per week: cheese, fish, poultry, soya beans, dried peas, and other items. In England they're lucky to get even one egg a month.

With these things in mind, how can we feel anything but grateful every time we sit down to a bountiful meal!

Firmly established habits regarding certain meat dishes will give way to considerations of greater importance. Our coupons, as well as our money, will be spent with the idea of procuring the greatest satisfaction possible. It's going to be a new adventure in marketing—and even in cooking.

### Facts About Meat

Sometimes you'll find that you may have to take a cut entirely different from the one you had in mind. In this way people will learn more about the various cuts of meat and their values. Here are some interesting facts to remember when buying meat:

<b>Hip:</b>	Round end rump roast; square end rump roast; round steak or round roast; boneless hind quarter; hamburg or ground beef;	Pot roasting or braising.
<b>Butt:</b>	Sirloin roast or steaks;	Roasting, broiling or pan broiling.

(Continued on page 21)

### KEY TO LETTERS

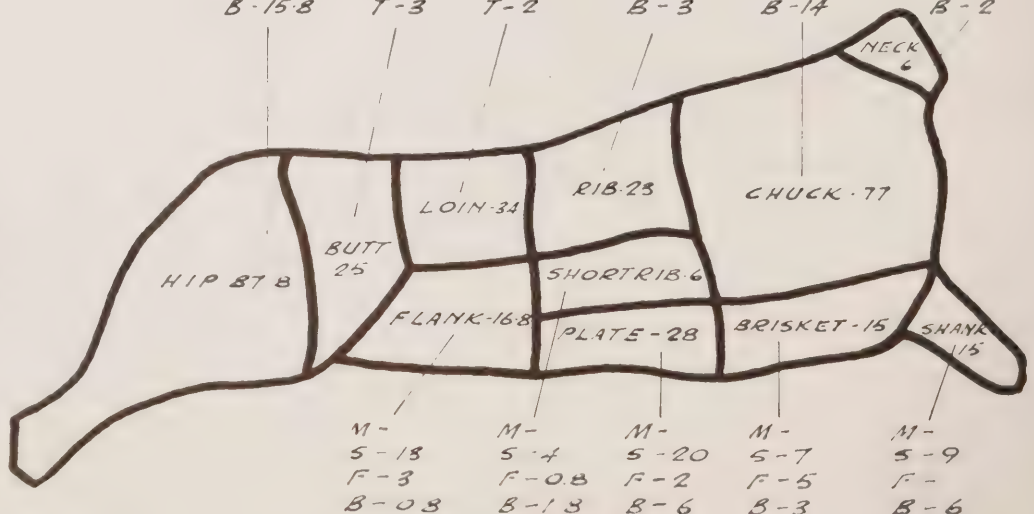
M - TENDER AND LESS  
TENDER MEAT  
S - TOUGHEST MEAT  
F - FAT  
B - BONE  
T - TENDERLOIN  
K - KIDNEY  
R - RIND  
SP - SPARE RIBS

### SIDE OF STEER - 333 LBS.

HIND - 163 LBS

FRONT - 170 LBS.

M-12	M-118				
S-3	S-5				
M-56.8	F-2	F-9	M-20	M-49	M-
S-8.8	B-5	B-5	S-	S-8	S-3
F-7	K-	K-18	F-	F-6	F-1
B-15.8	T-3	T-2	B-3	B-14	B-2



Charts such as the one shown here are designed to give essential information pertaining to the pieces from which the various cuts of meat are taken.



# Around the Hydro Circuit

## SUMMER MEETINGS

August 6, 1943, is the date set for the Georgian Bay Municipal Electric Association District meeting and, the rendezvous will be on a lake passenger boat starting from Port MacNicoll, according to word received from Herman S. N. Denef, secretary of District No. 2. This and other matters were discussed at an executive meeting held recently at Owen Sound under the presidency of R. D. Boyes.

In order to eliminate the "food rationing" that prevailed at last year's summer convention steps are being taken to provide all bona-fide delegates and guests with dinner tickets before the sale is thrown open to the public.

Niagara District No. 5, O.M.E.A., will hold their summer meeting at St. Catharines on June 9.

**CHARLES AUSTIN**, chairman of the Chatham Public Utilities Commission and a director of District No. 8, O.M.E.A., was born in the village of Eganville in the Ottawa valley, in the year 1869. As a youth Mr. Austin saw much of the early development of commerce and industry up and down the historic Ottawa river.



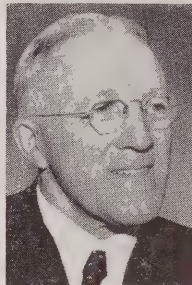
Charles Austin

Following his education in the town of Perth he set out for Schreiber (then only a divisional point on the Canadian Pacific Railway), where he established his own business. He went to Chatham in 1895 and founded the Charles Austin Company, general store, which became one of the leading mercantile concerns in western Ontario. Purchased by the T. Eaton Company, Limited, in 1928, this firm now operates as a unit of Canadian Department Stores.

In 1905 Mr. Austin became a member of the Chatham city council, and in 1910 was elected chief magistrate. He has been a member of the Kent Children's Aid Society since 1905, and during the Great War was president of the Kent County Patriotic Fund. After a temporary retirement from municipal life, Mr. Austin was elected to the Chatham Public Utilities Commission in 1936, and has been chairman four times. He was recently elected to the Commission for a further two-year term, and during his association with the utilities field he has been an active O.M.E.A. member.

Mr. Austin has travelled extensively throughout the world, particularly in China, where his daughter and son-in-law have been missionaries for some years. His skill in curling and lawn bowling is still the envy of many younger players.

Alexander McPherson, who has been identified with the Hydro-Electric Power Commission of Ontario for more than thirty years, has been appointed to the position of accountant, succeeding W. G. Pierdon, who retired recently.



A. McPherson

Of a quiet, reticent disposition Mr. McPherson came to this country from Scotland in 1910. The following year he became associated with the Commission, joining the staff of the accounting department. Prior to his present appointment, Mr. McPherson had held the position of assistant accountant and lately he was the cashier.

In his leisure hours he takes an interest in both golf and gardening.

## HYDRO BUILDS FOR VICTORY

(continued from page 8)

above there have been, during the three and a half years of war, hundreds of smaller expenditures as a result of extending distribution networks to war industries in all parts of the province and enlarging transformer stations and distribution equipment generally. The total of these expenditures is estimated to have exceeded \$11,000,000.

## RURAL SERVICE

During the early part of the war, when materials were still plentiful, the phenomenal progress that had been made in extending rural lines in the five years prior to the war was continued, and since the war started about \$6,500,000 have been expended on extensions to rural lines. When materials became scarce restrictions were imposed upon rural extensions that did not directly contribute to war industry. However, realizing the difficulties under which farmers were operating, the Commission made representations to the Dominion Controllers concerned, and last March the restrictions were revised to allow the Commission to supply electrical service where the distance from the point of supply to the distributing centre of the farm property is not more than a total of 600 feet, and "where electrical service would materially increase the production of foods which are in short supply."

The total capital expenditures to which reference has been made in the foregoing summary aggregate nearly \$55,000,000, the greater portion of which was required for what may be termed direct war expenditure.

## WANTED—A LINEMAN

If there is an eligible lineman "on the loose" at the moment he can apply for a position now open in a Western Ontario Hydro municipality. Any applicant must, of course, make application at his nearest Employment and Selective Service office for further information. The reference number is "H.O. 311."

## A CALL AT ST. KITTS

(Continued from page 17)

The 20-year debenture of \$30,000 borrowed at that time as an investment in the parks system will be retired next year.

The success of this programme is widely known to thousands of visitors who annually visit the district to see the masses of fruit tree blossoms which transform the countryside into a pink and white fairyland.

With St. Catharines are also associated many sports, including lacrosse and the famous Henley Regatta, while the city's five-day horse show is recognized as one of the greatest events of its kind in Canada.

Charles Daley, one of the city's most popular merchants, will establish a new public service record this year when he completes his fifth term as mayor. By virtue of his position, mayor Daley is a member of the Public Utilities Commission. Before his election as mayor, he had served four years as a member of the council, while he has been engaged in the grocery and meat business in St. Catharines for the past twenty-two years. A native of the Garden City, he was born in 1890 and served with the 4th Canadian Ammunition Park during the last war.

In addition to being mayor and serving on the utilities commission, Mr. Daley is chairman of the local ration board, and is in charge of A.R.P. for District No. 7 in which 60,000 people reside. He also inaugurated The Lord Mayor of London's Fund in St. Catharines and, to date, the citizens have voluntarily contributed \$27,000.

Keenly interested in sports, Mr. Daley was at one time prominent as a lacrosse player.

Harry A. Collins, who is serving his second year as chairman of the Public Utilities Commission was born in Bristol, England, and came to Canada when a boy. He was educated at the Dufferin School in Toronto and is a member of the Dufferin Old Boys' Association.

Mr. Collins has been a member of the local commission for six years and is secretary-treasurer and business manager of the Sanitarium at St. Catharines.

He has been in St. Catharines since 1913, is a member of the St. Catharines Club and a past president of the Lions Club. Mr. Collins' principal sports are golf and deer hunting.

### Was O.C. of Toronto Regiment

Col. F. C. McCordick, who has served on the commission for seven years, was on the local council for five years and occupied the mayor's chair for two years.

A native of the city, Col. McCordick has been engaged in the leather business in St. Catharines for forty-five years. Formerly he was O.C. of the 35th Toronto Regiment. He has held the position of chairman of the Public Utilities Commission and was the first president of the Lions Club. Hunting and fishing are his favourite hobbies.

Born at Holland Landing in 1883, Dr. William J. Chapman, another member and a former chairman of the commission, declares that Hydro is his hobby.

Dr. Chapman graduated in medicine from Trinity University in 1904, and two years later graduated from the Royal College of Physicians and Surgeons, London, England. After completing his post-graduate studies he returned to St. Catharines and began to practise in 1908. He is also on the staff of the General Hospital.

Noted as a keen sportsman, Dr. Chapman is a familiar figure among local lacrosse players who have had the benefit of his services for many years without cost.

It was in 1932 when he became a member of the Public Utilities Commission. In the intervening years, he has served as vice-president and president of the Ontario Municipal Electric Association and has become widely known throughout the province.

### Was Awarded D.F.C.

William B. Elliott, the other member of the Public Utilities Commission on which he has served for ten years, is a native of St. Catharines. In business life, Mr. Elliott is manager of Engineering Tool and Forgings Limited.

While serving with the Royal Air Force in the last war, he was awarded the D.F.C.—for something he won't discuss—at the Battle of Amiens in 1918.

In 1922, Mr. Elliott graduated from the University of Toronto with the degree of B.Sc.

He is a member of the local Chamber of Commerce and the Rotary Club, and likes to play golf and shoot with both gun and camera.

P. B. Yates, who has been manager of the Public Utilities Commission for nearly thirty years, was born in the United States, and is a graduate of Union College where he received the degree of B.Sc.

In 1906, Mr. Yates came to Canada as Canadian agent for a U.S. battery manufacturer. Two years later he became identified with the H.E.P.C., and in 1914 took over his present position at St. Catharines.

One of the originals of the Association of Municipal Electrical Utilities, Mr. Yates was acting secretary and the first president of that body.

His hobbies are golf and gardening.

Herbert H. Smith, city clerk and secretary of the Public Utilities Commission, was born and educated in St. Catharines. He entered the service of the city corporation in 1910 and was appointed city clerk in 1927 and secretary of the commission in 1933.

## MEN OF THE HOUR



Prime Minister Winston Churchill and General Bernard L. Montgomery are two names that are very much in the news these days as the forces of the United Nations make plans for final victory. This British official photograph was taken when the Prime Minister reviewed the 8th Army at Tripoli. General Montgomery is in the front of the car and Mr. Churchill is seated in the back with Lt. Gen. Sir Bernard Freyberg, V.C.



## HYDRO HOME FORUM

(Continued from page 18)

Loin:	T-bone steak; porterhouse steak; wing steak; loin roast;	Broiling or roasting.
Rib:	5-bone prime rib roast; rib roast;	Roasting.
Chuck:	Short or cross rib roast; blade roast; chuck roast;	Pot roasting, stewing or boiling.
Neck:	Neck pieces;	Boiling or stewing.
Shank:	Knuckle end; shank fore shank;	Boiling or stewing.
Brisket:	Beef brisket; minced brisket;	Corned, boiled.
Plate:	Rolled plate; minced plate;	Stewing, frying.
Short Ribs:	Short ribs;	Braising.
Flank:	Steak fillets;	Pot roast.

Cook meats at low temperatures to save all possible juices. This gives better flavor and reduces shrinkage. Medium cooked beef and lamb are finer in flavour and have less cooking shrinkage.

Save bones and trimming for soup stock.

Use cubed left-over meats in casseroles and scalloped dishes with cream sauce or in cold salads. The smaller pieces may be ground and used in patties, croquettes, timbales, sandwich fillings or omelettes.

### How to Prepare a Pot Roast

Electrical manufacturers provided the high speed broiling element and butchers supplied large tender or tenderized steaks which in pre-war days were placed on the broiling pan and cooked in "no time" without any preparation. Today, pot roasting will be one of the favorite cooking methods. Use a roast pan or kettle with a tight fitting lid. Brown the meat on all sides in a little hot fat. Lift meat out; add a small amount of tomato juice and make a thin gravy by adding a paste of flour and water. Put meat in again, baste with gravy, cover and cook 40-45 minutes per pound on electric element turned low, or in electric oven at 350 degrees.

### Interesting Variations

1. Instead of water, use 2 cups of tomato juice,  $\frac{1}{2}$  clove garlic.
2. Mix 2 tablespoons horseradish with milk and pour over meat.
3. Season with  $\frac{1}{2}$  bay leaf, a pinch of thyme and a few sprigs of parsley.
4. Make a marinade of  $\frac{1}{2}$  cup salad oil, 2 cups vinegar, 2 cups water, 10 peppercorns, 4 cloves, 1 sliced onion, 2 tsp. salt. Shake and use as cooking liquid.
5. For veal: 1 tbsp. mustard, 1 tsp. poultry seasoning, 1 tbsp. brown sugar, pepper and salt,  $\frac{1}{2}$  cup diced onion, 2 tbsp. vinegar.

### Pot Roast Leftovers

Slices: Reheat slices in gravy or in tomato, barbeque or sour cream sauce. Serve slices cold. Use in sandwiches; use with

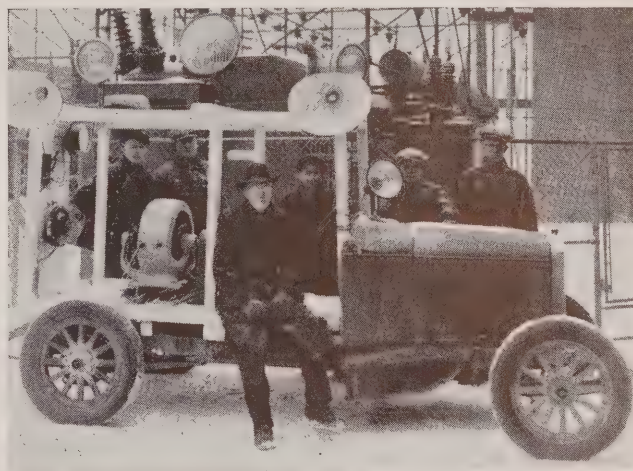
gravy in hot sandwiches.

Pieces: Cream. Serve on toast with rice, with noodles, over hot biscuits, à la king, in mushroom soup, gravy, or corn bread. Make into meat pies, turnovers. Use in casserole dishes, with macaroni, spaghetti, noodles or mixed vegetables. Make curry, with rice. Use in chop suey.

Ground: Make into hash, baked or fried. Make into hash folded like an omelet and filled with chili or creole sauce. Use as sandwich fillings, with mayonnaise, pickles, celery. Use as stuffing for vegetables—peppers, onions, tomatoes, cabbage, potatoes. Use in meat loaf, croquettes, salad.

Bones: Use in soup stock.

## CAR CONSIGNED TO SCRAP PILE BECOMES USEFUL A.R.P. TRUCK



A Pontiac sedan which clicked off an Oshawa assembly line seventeen years ago is today playing a wartime role as an A.R.P. truck at Owen Sound.

The "truck," shown above equipped with four searchlights, reveals the ingenuity of J. R. McLinden, superintendent of the Owen Sound Public Utilities Commission. Using an 8- $\frac{1}{2}$  kilowatt generator driven from the shaft of the truck engine, this remodelled car can be taken to any part of the city to provide sufficient light to make speedy repairs to damaged equipment, or to aid A.R.P. rescue workers, if the need should arise. Its usefulness is enhanced by the fact that the lights can be focused in any direction.

This ingenious device was constructed, during spare time, by linemen of the Owen Sound Utilities Commission, under the direction of Mr. McLinden, at a total cost of \$225.

The result is that Owen Sound now has an A.R.P. truck and twenty-five volunteer linemen and workmen.

Among the linemen who helped remodel the old car, which was purchased for \$35, are those shown in the above illustration. They are, from left to right, Robert Hamilton, William Gunn, line foreman; Fred Brackenboro, Norman Armstrong and Robert Gillesby. J. R. McLinden, the superintendent, is seated on the side of the car.

# Lighter Lines

Day in and day out, Joe had proved that he was in a class by himself as a salvage collector. Suddenly, he passed away and appeared before the Pearly Gates. "What did you do on earth," asked St. Peter as he checked up on the newcomer. "Salvage collector," replied Joe. St. Peter looked puzzled. "Just wait a minute until I look that up in my book," he said. When St. Peter returned both Joe and the Gates had disappeared!

\* \* \*

The Sultan at odds with his harem  
Thought of a way he could scare 'em;  
He caught him a mouse,  
Let it loose in the house,  
Thus starting the first harem-scarem.

\* \* \*

Raw recruit on sentry duty: "Who goes there? Friend or foe?"  
Voice: "Foe."

Raw recruit: "Well beat it. We're not organized yet."

\* \* \*

Customer: "Do you give a guarantee with this hair restorer?"

Barber: Guarantee sir? Why we give a comb!

\* \* \*

Say, caddy, why do you keep looking at your watch?

It isn't a watch, sir, it's a compass.

\* \* \*

**In paying a visit to Mohne and Eder, the R.A.F. did a "dam" good job.**

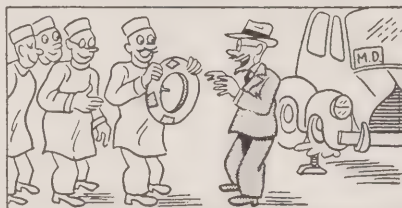
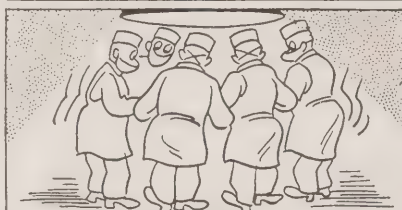
\* \* \*

Frantic enquiry from Japanese intelligence officer on Attu to Tokio reads: "Are we on Attu? Americans going around shouting 'Attaboy.'"

As time goes on the Japs will no doubt discover that their ideas about conquest are all "Aleutianations."

\* \* \*

Some men smile in the evening,  
Some men smile at dawn  
But the man worth while  
Is the man who can smile  
When his two front teeth are gone.



The newlyweds, in boarding the train, tipped the porter generously to keep their marriage a secret. Later, in the dining car, they saw people looking at them very strangely. "Did you tell these people we were married," they asked the porter. "Lan sakes, no. When they asked me is you married, I said no; they just good friends that's all.

\* \* \*

She: Changing a tire, eh?

He: No, no, I just get out every few miles and jack it up to give it a rest.

\* \* \*

Customer: I want something to wear around the dormitory.

Salesman: Size?

\* \* \*

The wind is blowing from the south.  
How do you know it's a south wind?

I have a pole cat tied up in the centre of the town and the residents in the north are complaining.

The clock struck three. Stealthily he opened the door and crossed the threshold. His eyes gleamed as he pulled his handle-bar moustache. She looked very beautiful as she lay on the divan, dreaming in the moonlight. Suddenly, he rushed forward, grabbed her in his arms and dashed out of the house. She was speechless with fear as he tossed her into a car and then drove through the night at break-neck speed. He stopped at a dense forest, grabbed her again and strode towards the tall grim, trees. Then she found her voice. "W-w-w-hat a-a-a-re you g-g-oing to do to me," she breathed. "How should I know," he snarled. "It's your dream isn't it?"

\* \* \*

"How may one obtain a good posture?" read one of the questions in the physiology examination.

One of the students, a country lad, wrote: "Keep the cows off and let it grow up awhile."

\* \* \*

Baby daughter: "Do angels have wings, Mummy?"

Mother: "Yes, darling."

Baby: "Can they fly?"

Mother: "Yes, dear."

Baby: "Then when is nurse going to fly, 'cause Daddy called her an angel last night?"

Mother: "Tomorrow, darling."

\* \* \*

What's a Grecian urn?

Depends on what he does.

\* \* \*

Then there was the man who crossed his hens with parrots to save time in hunting for eggs. Now, the hens come up to him and say: I just laid an egg—go get it.

\* \* \*

"Can you stand on your head?"

"No, it's too high."



## Primary Load for March Up 83,000 Horsepower

Primary power load demand on all Hydro systems during March, 1943, exceeded that for the corresponding month last year by approximately 83,000 horsepower. An increase of 3.8 per cent is thus recorded in the latest monthly load summary. Increases are also recorded in the three Southern Ontario systems and the Northern Ontario Properties, while the Thunder Bay system dropped slightly.

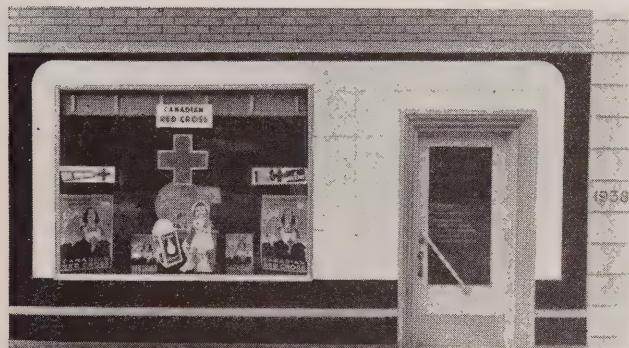
Total primary load demand on all four systems and the Northern Ontario Properties for March, 1943, was 2,250,946 horsepower, these figures being based on the maximum 20-minute peak horsepower load for the period.

Combined primary and secondary loads for the same areas in March of this year reached 2,360,759 horsepower, an increase of 1.7 per cent, or approximately 40,000 horsepower, over March of 1942.

### PRIMARY AND SECONDARY LOADS

	Maximum 20-Min. Peak H.P.		Per Cent
	Mar., 1943	Mar., 1942	Increase
Niagara System	1,758,713	1,704,960	3.2
Eastern Ontario System	190,352	175,011	8.8
Georgian Bay System	48,541	44,857	8.2
Thunder Bay System	125,322	136,193	-8.0
Northern Ontario Properties	237,831	260,283	-8.6
Total of all systems	2,360,759	2,321,304	1.7

## UTILITIES STAFF AID IN RED CROSS DRIVE

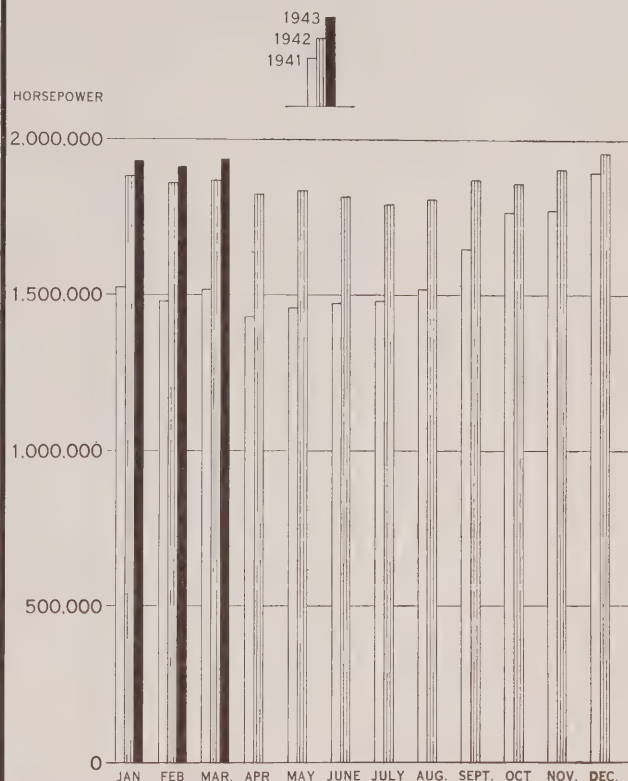


Chesley is a town where they do things in a big way. In the recent Red Cross campaign, for instance, the quota was oversubscribed a week before the closing date. This noteworthy achievement also reflects the efficient co-operation of the staff of the Chesley Public Utilities Commission, under the direction of mayor W. P. Krug, in receiving and tabulating the subscriptions. An indication of the active support given by the local utilities during the campaign is to be found in the window display shown above.

This fine building, which has been the headquarters for many local wartime drives, stands as a monument to Chesley's civic enterprise. In addition to the utilities, it houses other public services and has a modern library and a fine theatre.

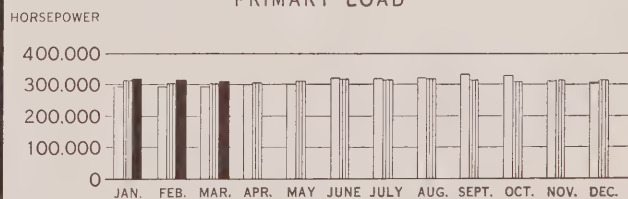
### SOUTHERN ONTARIO SYSTEMS NIAGARA — GEORGIAN BAY — EASTERN ONTARIO

#### PRIMARY LOAD



### NORTHERN ONTARIO PROPERTIES AND THUNDER BAY SYSTEM

#### PRIMARY LOAD



#### PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	MAR., 1943	MAR., 1942	
NIAGARA SYSTEM	1,698,525	1,649,866	+ 2.9
GEORGIAN BAY SYSTEM	48,541	43,818	+ 10.8
EASTERN ONTARIO SYSTEM	190,352	172,692	+ 10.2
THUNDER BAY SYSTEM	100,496	100,958	- 0.5
NORTHERN ONTARIO PROPERTIES	213,032	200,498	+ 6.3
TOTAL	2,250,946	2,167,832	+ 3.8

# MUNICIPAL LOADS, MARCH, 1943

## NIAGARA SYSTEM (25-Cycle)

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Acton	1,512	1,903	Erie Beach	7	21	Palmerston	559	1,400
Agincourt	187	P.V.	Essex	544	1,886	Paris	1,893	4,604
Ailsa Craig	103	487	Etobicoke Twp.	7,351	V.A.	Parkhill	153	1,029
Alvinston	92	649	Exeter	549	1,654	Petrolia	978	2,768
Amherstburg	737	2,704	Fergus	1,231	2,759	Plattsville	129	P.V.
Ancaster Twp.	337	V.A.	Fonthill	154	860	Point Edward	1,643	1,199
Arkona	52	403	Forest	475	1,562	Port Colborne	2,198	6,928
Aurora	1,270	2,821	Forest Hill	6,765	12,172	Port Credit	798	1,934
Aylmer	688	1,985	Galt	11,874	15,126	Port Dalhousie	856	1,599
Ayr	139	760	Georgetown	1,588	2,452	Port Dover	357	1,790
Baden	465	P.V.	Glencoe	177	763	Port Rowan	95	700
Beachville	780	P.V.	Goderich	1,387	4,674	Port Stanley	255	824
Beamsville	415	1,227	Granton	63	P.V.	Preston	4,219	6,656
Belle River	170	836	Grimsby	753	1,988	Princeton	136	P.V.
Blenheim	509	1,873	Guelph	11,206	23,074	Queenston	88	P.V.
Blyth	89	662	Hagersville	441	1,524	Richmond Hill	417	1,295
Bolton	228	629	Harriston	400	1,292	Ridgetown	510	1,986
Bothwell	115	683	Harrow	438	1,092	Riverside	1,062	5,235
Brampton	2,427	5,975	Hensall	187	686	Rockwood	95	P.V.
Brantford	21,957	31,622	Hespeler	2,832	2,938	Rodney	136	758
Brantford Twp.	967	V.A.	Highgate	93	322	St. Clair Beach	50	138
Bridgeport	128	P.V.	Humberstone	551	2,831	St. George	132	P.V.
Brigden	75	P.V.	Ingersoll	3,129	5,757	St. Jacobs	261	P.V.
Brussels	123	784	Jarvis	189	513	St. Marys	1,332	4,009
Burford	176	P.V.	Kingsville	552	2,453	St. Thomas	7,506	17,045
Burgessville	50	P.V.	Kitchener	26,631	35,456	Sarnia	10,330	18,599
Burlington	1,518	3,925	Lambeth	107	P.V.	Scarborough Twp.	4,402	V.A.
Burlington Beach	332	1,474	LaSalle	210	907	Seaforth	659	1,782
Caledonia	316	1,430	Leamington	1,357	6,048	Simcoe	2,244	6,340
Campbellville	32	P.V.	Listowel	1,294	2,984	Smithville	154	P.V.
Cayuga	112	700	London	37,906	77,105	Springfield	58	382
Chatham	6,323	17,184	London Twp.	515	V.A.	Stamford Twp.	2,412	8,275
Chippawa	301	1,228	Long Branch	1,202	4,258	Stoney Creek	229	933
Clifford	91	491	Lucan	173	643	Stouffville	242	1,198
Clinton	563	1,879	Lynden	93	P.V.	Stratford	6,390	17,163
Comber	123	P.V.	Markham	278	1,175	Strathroy	1,382	2,834
Cottam	73	P.V.	Merlin	83	P.V.	Streetsville	243	701
Courtright	43	355	Merriton	10,555	2,916	Sutton	151	949
Dashwood	86	P.V.	Milton	1,364	1,915	Swansea	3,062	6,907
Delaware	63	P.V.	Milverton	341	994	Tavistock	580	1,080
Delhi	580	2,430	Mimico	2,462	7,987	Tecumseh	315	2,331
Dorchester	113	P.V.	Mitchell	638	1,670	Thamesford	182	P.V.
Drayton	114	528	Moorefield	52	P.V.	Thamesville	176	816
Dresden	419	1,525	Mount Brydges	85	P.V.	Theford	93	598
Drumbo	85	P.V.	Newbury	31	288	Thorndale	62	P.V.
Dublin	40	P.V.	New Hamburg	538	1,441	Thorold	2,464	5,284
Dundas	3,048	5,245	Newmarket	1,552	3,800	Tilbury	1,375	1,923
Dunnville	1,286	3,916	New Toronto	11,761	9,469	Tillsonburg	1,233	4,602
Dutton	239	830	Niagara Falls	9,735	20,371	Toronto	346,974	657,612
East York Twp.	8,322	41,578	Niagara-on-the-Lake	658	1,764	Toronto Twp.	2,705	V.A.
Elmira	1,218	2,069	North York Twp.	9,728	V.A.	Wallaceburg	3,364	4,802
Elora	425	1,185	Norwich	391	1,301	Wardville	33	221
Embro	129	420	Oil Springs	205	541	Waterdown	204	867
Erieau	70	281	Otterville	77	P.V.	Waterford	448	1,294
						Waterloo	5,538	8,968



## MUNICIPAL LOADS, MARCH, 1943

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Watford	344	1,023	Neustadt	47	431	Lakefield	280	1,301
Welland	12,185	14,899	Orangeville	656	2,558	Lanark	61	686
Wellesley	89	P.V.	Owen Sound	5,596	13,559	Lancaster	41	570
West Lorne	210	768	Paisley	93	730	Lindsay	3,526	8,345
Weston	4,674	6,165	Penetanguishene	913	4,177	Madoc	162	1,130
Wheatley	189	761	Port Carling	115	520	Marmora	114	1,004
Windsor	49,718	104,415	Port Elgin	394	1,415	Martintown	43	P.V.
Woodbridge	582	946	Port McNicoll	84	950	Maxville	79	811
Woodstock	8,156	12,339	Port Perry	222	1,175	Millbrook	92	749
Wyoming	69	538	Priceville	10	P.V.	Morrisburg	208	1,484
York Twp.	20,122	77,175	Ripley	91	420	Napanee	1,172	3,241
Zurich	102	P.V.	Rosseau	23	305	Newcastle	163	701
(25 and 66-2/3 Cycle)			Shelburne	263	1,053	Norwood	106	710
Hamilton	162,370	164,719	Southampton	509	1,467	Omeme	163	630
St. Catharines	28,895	32,559	Stayner	223	1,106	Orono	80	P.V.
Trafalgar Twp.	485	V.A.	Sunderland	63	P.V.	Oshawa	16,857	26,610
(66-2/3 Cycle)			Tara	86	510	Ottawa	34,069	150,861
Bronte	150	P.V.	Teeswater	100	873	Perth	1,546	4,197
Oakville	1,077	3,369	Thornton	23	P.V.	Peterborough	11,160	24,977
GEORGIAN BAY SYSTEM			Tottenham	75	532	Picton	1,068	3,400
(60-Cycle)			Uxbridge	256	1,480	Port Hope	2,304	4,997
Alliston	328	1,700	Victoria Harbour	60	979	Prescott	1,228	3,283
Arthur	121	1,089	Walkerton	879	2,534	Richmond	53	428
Bala	76	355	Waubashene	62	P.V.	Russell	53	P.V.
Barrie	3,915	9,559	Warton	228	1,750	Smiths Falls	2,508	7,741
Beaverton	168	941	Windermere	25	117	Stirling	232	947
Beeton	113	617	Wingham	678	2,149	Trenton	5,093	8,183
Bradford	185	1,041	Woodville	56	439	Tweed	170	1,181
Brechin	45	P.V.	EASTERN ONTARIO SYSTEM			Warkworth	59	P.V.
Cannington	138	761	(60-Cycle)			Wellington	178	948
Chatsworth	63	333	Alexandria	167	1,976	Westport	74	725
Chesley	446	1,812	Apple Hill	29	P.V.	Whitby	1,298	4,236
Coldwater	100	545	Arnprior	1,114	4,019	Williamsburg	83	P.V.
Collingwood	2,437	6,249	Athens	82	626	Winchester	271	1,017
Cookstown	70	P.V.	Bath	29	325	THUNDER BAY SYSTEM		
Creemore	113	661	Belleville	6,637	15,498	(60-Cycle)		
Dundalk	231	686	Bloomfield	81	636	Fort William	14,092	30,370
Durham	363	1,874	Bowmanville	2,500	3,850	Nipigon Twp.	195	V.A.
Elmvale	136	P.V.	Brighton	327	1,462	Port Arthur	18,218	24,217
Elmwood	50	P.V.	Brockville	4,132	10,576	NORTHERN ONTARIO		
Flesherton	49	452	Cardinal	221	1,602	PROPERTIES		
Grand Valley	102	645	Carleton Place	1,606	4,143	Nipissing District		
Gravenhurst	1,004	2,261	Chesterville	227	1,094	(60-Cycle)		
Hanover	1,243	3,190	Cobden	79	643	North Bay	4,393	16,013
Holstein	9	P.V.	Cobourg	2,120	5,907	Patricia District		
Huntsville	1,039	2,943	Colborne	194	960	(60-Cycle)		
Kincardine	675	2,483	Deseronto	169	1,002	Sioux Lookout	300	1,967
Kirkfield	24	P.V.	Finch	107	396	Sudbury District		
Lucknow	301	856	Frankford	118	1,095	(60-Cycle)		
Markdale	164	776	Hastings	90	823	Capreol	211	1,660
Meaford	623	2,759	Havelock	124	1,103	Sudbury	8,159	32,731
Midland	4,041	6,764	Iroquois	200	1,123			
Mildmay	110	764	Kemptville	357	1,230			
Mount Forest	413	1,936	Kingston	12,753	29,545			



# WATER POWER

## BUILDS FIGHTING SEA POWER

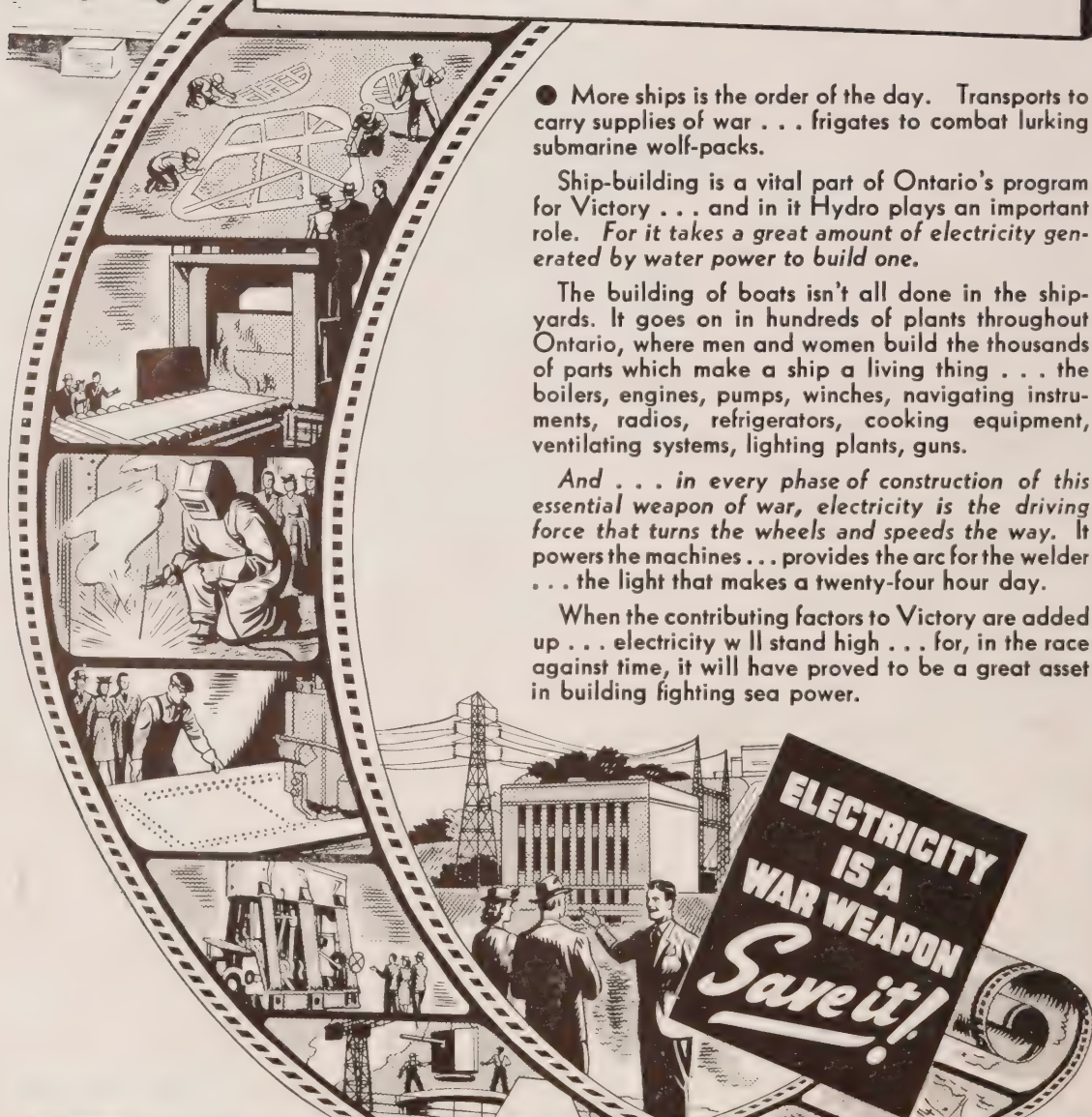
● More ships is the order of the day. Transports to carry supplies of war . . . frigates to combat lurking submarine wolf-packs.

Ship-building is a vital part of Ontario's program for Victory . . . and in it Hydro plays an important role. *For it takes a great amount of electricity generated by water power to build one.*

The building of boats isn't all done in the ship-yards. It goes on in hundreds of plants throughout Ontario, where men and women build the thousands of parts which make a ship a living thing . . . the boilers, engines, pumps, winches, navigating instruments, radios, refrigerators, cooking equipment, ventilating systems, lighting plants, guns.

*And . . . in every phase of construction of this essential weapon of war, electricity is the driving force that turns the wheels and speeds the way. It powers the machines . . . provides the arc for the welder . . . the light that makes a twenty-four hour day.*

When the contributing factors to Victory are added up . . . electricity will stand high . . . for, in the race against time, it will have proved to be a great asset in building fighting sea power.



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



# HYDRO! News



"EYES" UP!





# THE HUM OF **HYDRO** IS THE *Voice of Victory*

● The war calls everyone to a post in 'the front line'—in or out of uniform—and your Hydro answers "Ready!" Giant energy, tapped from Ontario's waters, flows over 6,000 miles of transmission lines to shops, mills, factories, foundries, mines and shipyards—wherever the tools of victory are being forged.

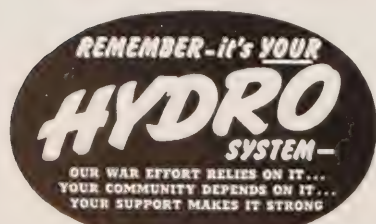
It may be simply shell-casings, or it may be thundering tanks, swift, sturdy corvettes or sky-filling planes. Whatever it is, Hydro energy is there to speed the work in a thousand plants.

Your Hydro was ready for war-time industry. Ontario's citizens can take pride in that. And,

outside of industries, Hydro is supplying the needs of 600,000 users in city homes and 131,000 users in rural districts.

Of course, war-time needs have first call on Hydro power. Furthermore—there must be a sparing use of metals and materials once commonly used in extending Hydro service. These are demanded in war industries—vital to victory!

New projects, new war plants with new machines for new production are on the way. Hydro must and will supply the power needed. To this end, Hydro earnestly solicits the co-operation of all of the people of Ontario.



## WARTIME HINTS FOR HOMEMAKERS

You can save current consumption by having your electrical dealer or local 'Hydro' put your appliances in first-class working order. Cook several courses at one time in the electric oven, using bottom element only. Never leave the kitchen with elements on 'high'. Operate the automatic controls as directed.

*Canada asks—Buy More War Savings Certificates*

**THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO**



# HYDRO News

*formerly The BULLETIN*

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

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## The Front Cover



On a visit to Hydro com-  
munity victory gardens in  
Toronto recently, a photog-  
rapher discovered plenty of  
activity and formed a num-  
ber of interesting impres-  
sions including the one  
reproduced on this month's  
front cover. The two charm-  
ing Hydro victory gardeners  
are Frances Powell (kneel-  
ing) and Eunice Wands.  
The title "Eyes Up" is, of  
course, a reminder that  
potatoes should be planted  
with their eyes up!

Volume 30

June - July 1943

Numbers 6 and 7

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## DOWN TO EARTH FOR VICTORY

ON this page are recorded a few camera impressions of activities at two of Hydro's community victory gardens. No. 1—Edithemma Muir, home economist of the H.E.P.C., dons her going-to-garden attire and demonstrates that she can handle wooden stakes just as adroitly as juicy steaks. No. 2—Well-armed with the necessary tools, this active line of Hydro gardeners had launched what looked like a full-scale offensive when the photographer arrived on the scene. In the foreground are Eunice Wands, Frances L. Powell, R.N., H.E.P.C. nurse, and A. B. Hayman. No. 3—Included in this busy group are Mary E. Watters, Margaret Leworthy, Miss Morrow, Shirley McCarten, Edithemma Muir, R. H. Starr, W. L. Amos and Adam Smith, chairman, campaign committee. No. 4—A. B. Hayman and Roy Harmer (kneeling) get on with some seeding while Mr. Harmer Jr., and the dog provide the necessary moral support. These are but a few who have joined the ranks of Hydro's army of approximately 800 enthusiastic victory gardeners. Adam Smith and his lieutenants hope that 80 tons of vegetables and fruits will be produced for Hydro tables this year.





## \* *Page Three* \*

### FIRST FLOW FROM OGOKI

**W**ITHIN the next few weeks the Ogoki diversion will be opened. The initial flow, coming from north of the height of land, will be gradually stepped up during the ensuing months.

This five million dollar diversion ranks as one of the outstanding achievements of its kind on record. Along with the Long Lac diversion, it makes possible the development of 360,000 additional horsepower at various developed and undeveloped sites between Lake Nipigon and the mouth of the St. Lawrence river.

Not only do these projects represent a vital contribution to the development of Hydro power but navigation on the Great Lakes will benefit to a substantial degree.

### MARKING A YEAR OF SERVICE

**W**ITH publication of this issue, Hydro News completes its first year of service in portraying the passing panorama of Hydro progress and achievement against a war-time background.

Many momentous events have been chronicled in the annals of world history during the past twelve months as the forces of the United Nations have assumed the initiative in all theatres of combat. They have been days of "sweat, toil and tears" and, at the same time, days which have witnessed the dawning of the "mellow light of victory."

In the great marshalling of forces and resources and in the record of heroic exploits on land, sea and in the air the role played by Canadians has been widely and highly acclaimed.

Hydro's contribution to Canada's noteworthy achievement in the production of all types of military equipment and munitions has been one of pre-eminent significance. This fact has been dramatically and clearly substantiated in articles published in Hydro News. These articles have sought to portray how Hydro has steadfastly adhered to the principle of serving the best interests of the people in time of war as it did in the days of peace. Low cost Hydro power has provided the essential driving force for industry and, at the same time, has been the major factor in bringing new comforts and conveniences to the home.

During the year Hydro News has also directed attention to the spirit of loyal and patriotic co-operation exemplified by Hydro municipalities and consumers alike in curtailing the use of electricity for non-essential purposes to enable war plants to maintain, without interruption, their all-important production job.

Now entering its second year—a year in which the efforts of free men may have the opportunity of wider expression in shaping the destiny of all nations—Hydro News will adhere to its policy of strengthening the bonds of common interest and goodwill among the members of our large Hydro family.

### SARNIA'S FINE RECORD

**O**FFICIAL opening and dedication of new offices for the Sarnia Hydro-Electric Commission focuses attention upon the splendid record this municipality has achieved since the inception of Hydro there in 1916.

Sarnia is one of the many examples throughout Ontario of wise and careful administration of Hydro funds. Assets of the commission since its inauguration have grown from \$270,000 to over a million and a half dollars. Keeping pace with the steady increase in assets has been the steady decrease in the funded debt of this public enterprise, until to-day only \$6,000 remains outstanding, and that, members of the Sarnia commission predict, will be wiped off next year.

Coupled with the wise administration of the funds of the commission has also been a sincere desire to give the citizens of Sarnia the best possible service. It has consistently followed Hydro's policy of providing power at cost. Since Hydro was inaugurated in Sarnia both domestic and commercial rates have been reduced to a point where they are paying only from 25 to 30 per cent of what they formerly paid.

The many tributes paid to the members of the staff for their co-operation during the trying period, when a boiler explosion wrecked its former offices, augurs well for the future of Hydro in Sarnia. Such co-operation indicates a fine "esprit de corps" which has been characteristic of the relations between the staff and the commission. This is one of the foundation stones of the successful operation of a public utility.



# Water and POWER

**W**ATER is an important resource in its own right. Without it, no renewable resource could exist and no population could be maintained and sustained.

Some of the principal uses of water are: domestic and industrial water supply; navigation and lumbering; irrigation and plant growth; power development; drainage and disposal of waste; recreation and maintenance of wild life.

Water and power and other benefits that spring from it are resources that, unlike many others, are constantly renewed and are not depleted with use. The sum total of water or potential water power in a district is practically constant over a period of reasonable

**By Otto Holden**

**CHIEF HYDRAULIC ENGINEER, H.E.P.C.**

length. The amount of precipitation has changed but little, if any, but the changes that have taken place in the countryside have changed the sequence of its return to the sea whence it came. These changes are reflected in the effect on the land itself by the passage of the water, and in the varying flows in the streams and rivers.

We must not assume that, under conditions of nature, our streams all had copious supplies of water at all times, because some of the earliest records note the operation of mills being restricted during periods of low flow. On the other hand, there can be no question that certain alterations such as the removal of the forest cover and the draining of swamps and other areas has materially affected the distribution of stream flow throughout the year. While the total



O. Holden



**T**HIS article is based on an address delivered by Mr. Holden at the recent conference on the resources of Eastern Ontario. The one-day event, which brought together many eminent authorities on natural resources, was held at Queen's University under the chairmanship of Dr. R. C. Wallace, the principal.

run-off from a completely denuded area is probably greater than from a densely forested area, in the same way that the run-off from a pavement is greater than from a turfed area, the rate of run-off will be entirely different.

### Underground Water Reservoir

Let us at this point consider the natural water cycle or, as it is sometimes known, the hydrological cycle. Starting with the precipitation of rain or snow as it falls on the earth, this water may be disposed of in several ways. Some will be evaporated, returning to the atmosphere, some will sink into the ground, some will run off into the water courses. The surface run-off proceeds on its way by stream, river and lake to the sea. That portion which sinks into the ground may be used to support plant life, and thus be dissipated through transpiration, or it may sink down to form part of the underground water reservoir which is present under practically all parts of the earth's surface. It is this groundwater that feeds the springs and wells and supplies in large measure the flows in the streams in periods of reduced precipitation and in winter, as well as providing the source of moisture for the support of plant life, probably the most important of all its functions.

In due course the water in the streams reaches lakes or sea, and is evaporated and falls again to the earth, and so the cycle is completed.

Of the several factors affecting changes in the regimen of water supply, the change in forest area is one of the most important. Forest cover by shade and by the absorptive blanket of the forest floor retains the snow and rain, giving it a greater opportunity to sink into the ground and replenish ground water supplies, or allows it to run off at a slower rate than it would from the exposed earth surface.

As a result, it may be said that the forests improve the distribution of run-off throughout the year. This not only results in an increase in the flows in periods of low precipitation, but also tends to reduce the peaks in flood periods. The forest cover, however, under certain circumstances, may contribute to maximum floods by retaining in its shelter a considerable depth of snow until the period of heavy spring rains, which in combination with the melting snow, may produce a maximum flow.

Similarly, the drainage of swamps and low areas reduces the natural surface and underground storage, and has an effect similar to the removal of forest growth.

In addition to the more spectacular damage caused by flooding along the main water courses as a result of excessive flows, there is a more gradual but often more serious damage resulting from the rapid shedding of water from the ground surface, with the resulting carrying off of large quantities of valuable soil.

### Provide for Reduced Flow

To retard the rate of run-off, and to supplement the natural storage of water, various methods have been resorted to. These include, for the former purpose, contour ploughing and the construction of small dams in the minor water courses; while for the latter, storage reservoirs have been provided either on lakes or in the river valleys. These

*(Continued on page 30)*

### SOUTH LOWER FALLS OF WOMAN RIVER





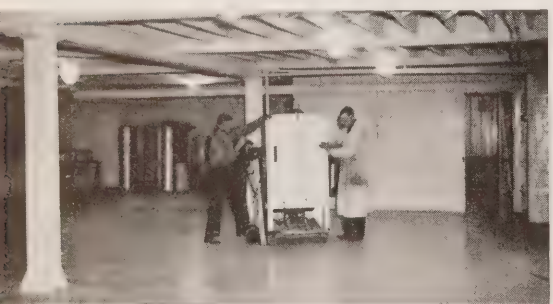


# Sarnia's NEW HOME

Shown above are the premises which were wrecked by an explosion last year. The new modern home of the Sarnia Hydro-Electric Commission at Lochiel and Victoria Streets is illustrated on the right.



This is the business office in the new building purchased by the Sarnia Commission.



The basement (left) is designed to provide space for a showroom along with storage and service facilities.

## Banquet Marks Dedication of Modern Building Valued at \$50,000—Located at Lochiel and Victoria Streets— Out-of-Town Visitors Attend Noteworthy Event

SARNIA stands on the threshold of new and greater industrial achievements which will make a far-reaching contribution to the war effort of the United Nations and to the economic life of the city in particular and of Canada in general.

This, in brief, was the keynote of addresses delivered at the banquet tendered by the Sarnia Hydro-Electric Commission in the Vendome Hotel on Friday evening, June 11. The occasion, as George N. Galloway, chairman of the commission, pointed out, was to dedicate and mark the official opening of the fine new Hydro building located at Lochiel and Victoria Streets.

### Need "Arose" Overnight

In attendance at the dinner were approximately 100 guests, including local commission employees and their wives, representatives of other commissions, suppliers, civic dignitaries, officials of The Hydro-Electric Power Commission of Ontario and others, while J. B. Hay, chairman of the London Public Utilities Commission, was the speaker of the evening. The proceedings also featured a programme of enjoyable entertainment.

During the afternoon the visitors had an opportunity of inspecting the new two-storey headquarters which was originally known as the Gardiner building and which was purchased and modernized by the commission at a total inclusive cost of between \$45,000 and \$50,000.

Up-to-date in its appointments and decorative scheme the new structure is compact in layout and has wide

This is another view of the interior of the main office, showing where Sarnia Hydro consumers pay their bills.







In this section of the head table group (left) the cameraman spotted George N. Galloway, chairman of the Sarnia Hydro-Electric Commission; Mrs. Galloway, J. B. Hay, chairman of the London Public Utilities Commission; Mr. and Mrs. R. M. Durnford and Mrs. E. J. Blake, Sarnia.

Here we find J. T. Barnes and Mrs. Barnes and Mayor W. C. Hipple of Sarnia.



Charles Austin, chairman of the Chatham Public Utilities Commission, (right) was doing a good job as a raconteur when the photographer got this shot. Mr. Austin's interested listeners include Claude McMann, manager and superintendent of the Sarnia Hydro-Electric Commission; J. N. Wilson, H.E.P.C., and Benson Wilcox, London



window display space on two streets. Executive and sales offices are located on the main floor, while the large, re-designed basement provides space for a showroom along with service and storage facilities. Claude McMann, the genial manager of the Sarnia Hydro, also directed the attention of *Hydro News* to the "knotty pine room," a small retreat in the basement where detailed clerical and engineering work can be done.

As Richard M. Durnford, vice-chairman of the commission, aptly expressed it, "the need for a new building arose overnight," the former premises

(Continued on page 31)



Coming to this group, the photographer found R. S. "Smoky" Reynolds, Chatham; Elmer D. Weaver, Petrolia; and Stan McNeil, Sarnia. At this table (right) the photographer found Miss A. Taylor flanked by Paul Willes and George Murray.



Everybody in the groups shown above appeared to be quite happy when the cameraman came along. Among those at the lower left can be seen J. A. Blay, H.E.P.C., and Perry E. Bertram, secretary of the Sarnia Hydro-Electric Commission with other banquet guests.







Part of the diversion scheme, which will eventually drain away the water covering the deposits of iron ore embedded in Steep Rock lake, involves the cutting of two channels through solid rock. The tunnel shown above is being driven under Finlayson lake.

**H**YDRO power will help move a hundred billion gallons of water and thus uncover an estimated 15,000,000 tons or more of iron ore below the surface of Steep Rock lake.

The role which Hydro will play in this, one of the most unique iron mining jobs ever undertaken on this continent, is the construction of a 120 mile transmission line, more than half of which is over difficult and typically north-country terrain.

Now under construction between Port Arthur and Steep Rock lake, this line is expected to be completed by fall, at an estimated cost of between \$1,300,000 and \$1,500,000.

This mining project, according to engineers, is well worth while, because it is expected to yield a quantity of a particularly rich grade ore. They also stress the value of this ore at a time when there is a scrap iron shortage.

Hydro's 110,000-volt line will supply power not only to the mine at Steep Rock lake, but to the Ontario-Minnesota Pulp and Paper Company, replacing the energy it will no longer be able to generate at its Moose lake generating station.

The 12,000 kv-a Moose lake plant, which lies in the channel connecting Moose (sometimes referred to as Marmion) lake and Steep Rock lake, will be shut down, when as an essential prelude to the draining of Steep Rock lake, the waters of Moose lake are diverted through Finlayson lake and into the Seine river below the site of the mining operations.

Finlayson lake is some 35 feet higher than Moose lake and for this reason it is necessary to lower the level of Finlayson lake so that the water will flow into it naturally, from Moose lake.

Finlayson lake level could be lowered by cutting through the ridge of moraine overlying the rock, which now dams the lower end of the lake, and allowing the water to rush down the valley. The possible resultant destruction in the valley, however, precludes such a course.

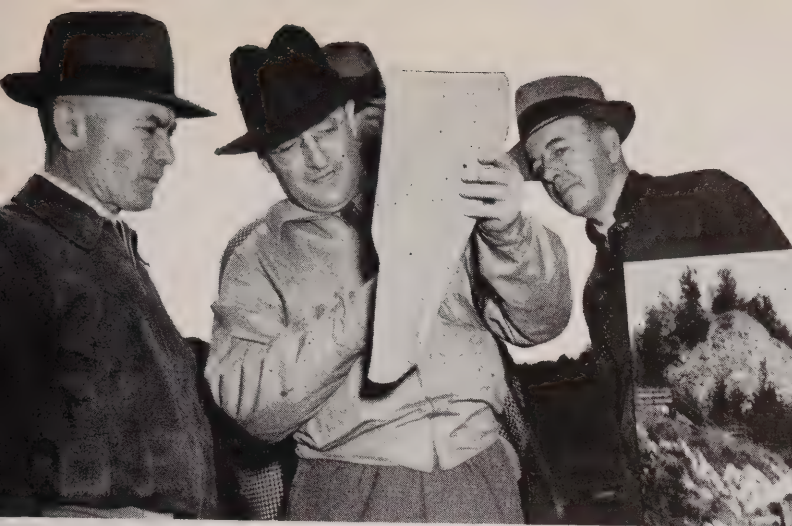
For that reason, an underground tunnel is being bored to drain Finlayson lake from the bottom. This drain, cut through solid rock, will accomplish two things; firstly, it will lower the level of the lake slowly enough to prevent flooding, and will give engineers complete control of the water. This water will be used to scour out a channel through which the diverted water will eventually flow.

When the level is lowered sufficiently a rock cut will be made of sufficient dept to carry the natural flow of the diversion.

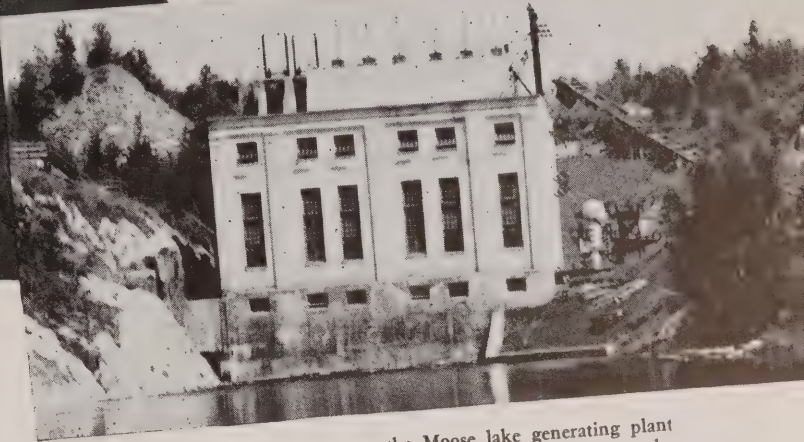
A similar rock channel will be constructed between Moose lake and Finlayson lake and for that purpose a small spring-fed lake known as Raft lake is now being pumped dry.

It was determined from preliminary surveys carried out last winter that the line, starting from the Commission's





Included among the engineers and financiers who visited Steep Rock recently are the trio shown above. They are, from left to right, Dr. Thomas H. Hogg, chairman and chief engineer, H.E.P.C.; Watkin Samuel, technical adviser; and W. R. Daley of Cleveland.



This illustration shows the Moose lake generating plant which is to be shut down as an essential prelude to the draining of Steep Rock lake.

Arthur transformer station, would traverse comparatively well-developed country for nearly forty miles, parallel to the Trans-Canada Highway for most of this distance. At a point north of Shabaqua, on the Canadian National tracks, where the highway turns north to Kenora and Winnipeg, typical northern bush country, with its attendant construction and conditional problems, will be encountered for the remaining eighty miles to Steep Rock.

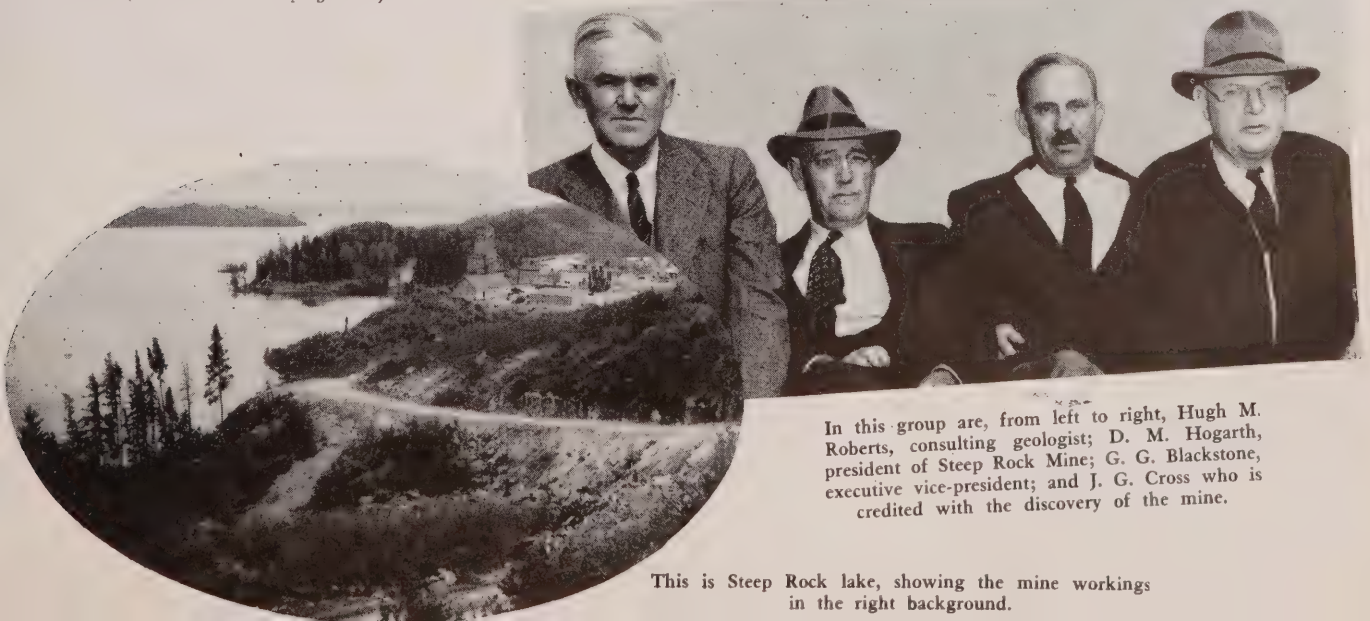
The problem of wartime scarcity of material has been alleviated to a great extent by the use of wooden poles and salvaging of material from other lines throughout the province. In the main, 50-foot western cedar poles, using wood pole "H" frame construction, with spans averaging approximately 525 feet, will be utilized. The 25-foot cross-arms will consist of pressure-treated Ontario pine. Power conductors will be obtained from certain lines in the Niagara system, which have decreased in importance with the development of the Commission's Eastern power supply, thus obviating the necessity of securing material.

Two ground wires, supported on steel bayonets, are planned to provide adequate protection from lightning discharges in this rocky terrain. These two ground wires

(Continued on page 11)



Here is a view of Raft lake through which the Seine river will be diverted from its present course as part of the scheme for the diversion of water now draining into Steep Rock lake.



In this group are, from left to right, Hugh M. Roberts, consulting geologist; D. M. Hogarth, president of Steep Rock Mine; G. G. Blackstone, executive vice-president; and J. G. Cross who is credited with the discovery of the mine.

This is Steep Rock lake, showing the mine workings in the right background.



## TALKING ABOUT

By **M. J. McHENRY**

Chief Priorities Officer, H.E.P.C.

**R**ECENT orders issued by the Priorities Officer, Department of Munitions and Supply, Ottawa, effect considerable change in the priority regulations for electrical public utilities. Two orders recently issued are Nos. P.O.4, and P.O.5, which became effective May 19, 1943, and June 1, 1943, respectively. It is impossible, in an article of this length, to detail these new orders and therefore, utilities should obtain copies and study them carefully. The trend of these orders should be to simplify the process of purchasing by Canadian electrical utilities.



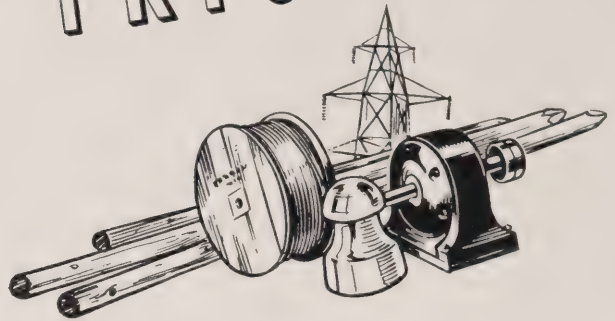
**M. J. McHenry** Order No. P.O.4 establishes a Programme Classification System, and makes it mandatory for every purchaser of goods or commodities valued at \$25 or more, and other than a retailer or person buying from a retailer, to place on his purchasing order the appropriate Classification Code Number.

This Classification System will be used to assist in distributing critical materials to war and essential civilian programmes, to obtain information necessary in presenting Canada's requirements of materials from the United States, and to provide industry with information for completing priority applications. The appropriate Programme Classification Code Number for electrical utilities is "P.C.S.16." All electrical utilities should show this Code Number on their purchasing orders, and should note that in the case of materials for maintenance, repair and operating supplies, the following phrase, "for use as maintenance, repair and operating supplies," should be shown along with the Code Number. If, however, the material is for construction or capital equipment, only the Code Number should be given.

#### Definition of Classifications

Particular attention should be given to the definitions of various classifications of material in Section 1 of this order P.O.4, and further note made of Schedule 2 of the order, which excludes certain items from the classification of maintenance, repair and operating supplies. However, for equipment listed in Schedule 2 replacement parts can be classified under Code No. P.C.S. 16, as maintenance and repairs.

## PRIORITIES



The application of preference ratings is now covered by Priorities Officer's Order P.O.5, assigning to all electrical public utilities, "Preference Rating AA-1, MRO", with accompanying certification. This rating covers material and supplies solely for maintenance, repairs and operation, for a "Class II Importer". Since Municipal Hydro Utilities will not purchase in any one month by direct import from the United States, more than \$500 worth of material, they will classify as a Class II Importer. In addition, it should be noted that maintenance, repair and operating supplied will also include capital expansion within the permitted limits of Metals Control Order M.C. 23.

It is very important to note here that the assigned preference rating must not be used on orders to Canadian suppliers or manufacturers, and is only to be used on material directly imported by the utility from the United States.

Along with order P.O.5, the Priorities Officer has issued instruction letter No. 15, File M, which revokes Preference Rating Order P.46 (latterly known as U.1). The ratings assigned by this order can no longer be used by electrical utilities in Canada, who will now use, for direct imports only, the rating assigned under order P.O.5. Where orders are placed with Canadian manufacturers, distributors or agencies, no preference rating is required. Here the Programme Classification Code Number is used exclusively.

The reason for this is that Canadian manufacturers and distributors now have provision, under the Modified Controlled Materials Plan, for obtaining their requirements from the United States through the Department of Munitions and Supply, without the need for preference ratings on the part of the ultimate Canadian purchaser.

#### Limitation Orders Should Be Studied

The foregoing remarks deal mainly with material for maintenance and repairs. However, for all material required for capital extension or construction of plant other than the small amount permitted as MRO under M.C.23, the appropriate Classification Code Number under P.O.4 must be used. In cases where capital equipment is being imported in completed form either direct or through a Canadian supplier, application must be made to Ottawa for necessary clearances. In most instances, such application can be made on Form P.D.1A.

(Continued on next page)



## STEEP ROCK

(Continued from page 9)

will be tied together and grounded at each structure and the supports for these wires will be fabricated from dismantled members of thirty-year-old towers.

At the Moose lake terminal of the line, interconnection will be made with the existing 110,000-volt system of the Ontario-Minnesota Pulp and Paper Company. Interconnecting switching equipment will be provided to independently control the transmission lines, together with the metering and other equipment required to deliver power to the Ontario-Minnesota and the Steep Rock companies.

Engineers have expressed the hope that the project can be completed by the late Fall of this year, to coincide with the scheduled completion of the diversion works and the installation of the pumping plant at Steep Rock. It is believed the Steep Rock company anticipate that mining operations will be in full swing by the summer of 1944.

Following the draining of the lake, and before actual mining operations can proceed, overbearing material must be removed. After this has been done, mining will proceed using the open pit method.

Dr. Thomas H. Hogg, chairman and chief engineer, of the H.E.P.C., accompanied by a distinguished group of financiers, government representatives and officials of Steep Rock Iron Mines Limited, recently visited the scene of operations.

Dr. Hogg said that there is a strong possibility of the establishment at Steep Rock within a few years, of an electric furnace for development of the district's iron ores into the finished product.

He also said, if and when the iron industry initiated at Steep Rock expands and the general mining area contiguous is developed, he expected a further expansion of the Nipigon river power resources. Development of these additional power projects would be a good post-war employment project, he added.

## TALKING ABOUT PRIORITIES

(Continued from previous page)

We recommend that all utilities obtain a copy of orders P.O.4 and P.O.5, and of General Instruction Letter No. 15, File M., from the Priorities Officer at Ottawa. Particular note should be made of the following points:

- (a) Programme Classification Code No. to be shown on all orders to Canadian suppliers.
- (b) The provisions of U.S. orders P.46 and U.1 to Canadian Utilities are revoked.
- (c) For maintenance, repair and certain operating items, preference rating AA-1 is assigned to electrical utilities, but only for direct imports from the United States.
- (d) Metal Control Order M.C.23 is the basis for use of materials by Canadian electrical utilities.

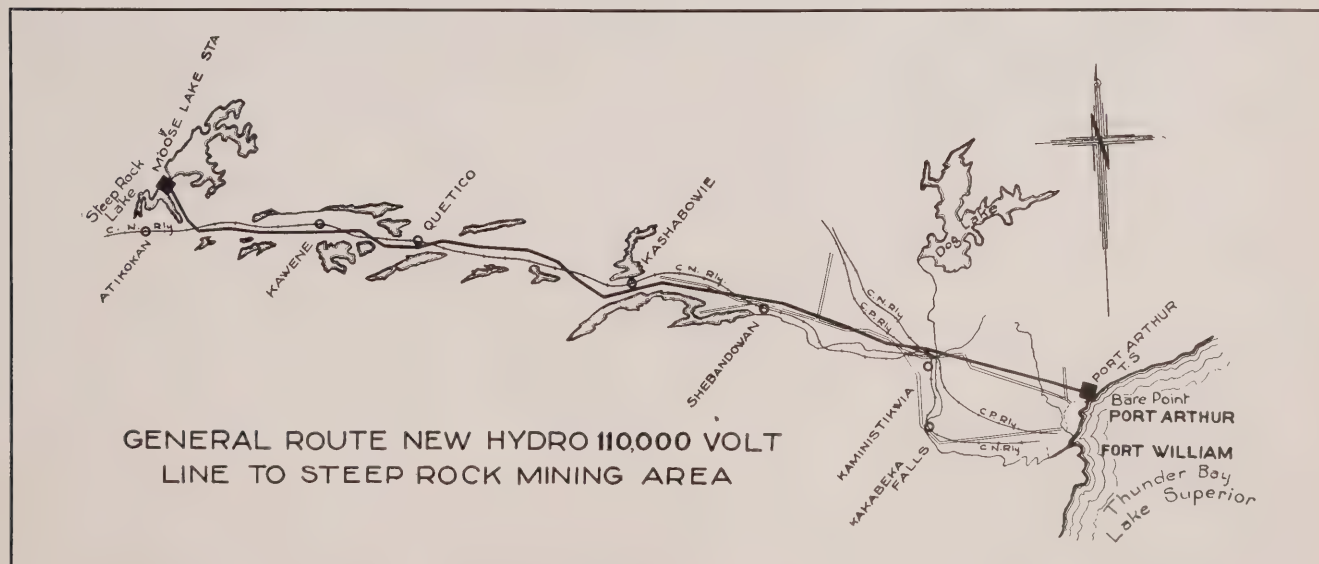
While these new orders provide simplified methods to assist in the purchasing of essential material and equipment required by utilities, it should be remembered that the control of the use of all material by electrical utilities is covered in Metals Control Order M.C.23, and amendments thereto. In addition, there are many limitation orders by the Administrators of the Wartime Prices and Trade Board, which limit the manufacture of electrical equipment in Canada. The principal orders of this type are Nos. A-434, A-568 and A-569 of the Administrator of Electrical Machinery and Equipment, and also similar limitation orders issued by the Administrator of Electrical Supplies.

## HYDRO UTILITIES SUBSCRIBE TO LOAN

A total of \$3,186,500 has been subscribed to Canada's Fourth Victory Loan by Hydro utilities according to the latest reports received by the H.E.P.C.

These bonds are held by the individual utilities for their reserve funds.

This sum is in addition to the amount subscribed by Hydro utility employees through payroll deductions.



# ELECTRICITY IN MUSIC



Here is Professor Leon Theremin with his own creation of a musical instrument which is known as the Theremin. This unique instrument is played by moving the hands within its electric field.



This is not a mirage, but a photographic study which is designed to illustrate a Novachord which is designed to simulate a violin. Inset (right) shows the vacuum tube oscillators which reproduce the musical tones in a Novachord.

By Grace J. Carter

**E**LECTRICITY has greatly enriched the world of melody during the past decade by opening up a new and wider range of tonal quality and beauty in instrumental renditions of both classical and popular music.

Within the hushed walls of the chapel, the electric organ is giving new and more glorious voice to immortal music of the past; and in the field of musical recording, the colourful electric juke box in its setting of tinselled glory is reproducing the modern waltz with a lilting, rhythmical fidelity.

This revolutionary trend in instrumental development does not in any way displace the artist—in fact it makes him more important than ever and gives him greater scope.

Electrical music is not a reproduction from a record or from a radio wave which carries a musical programme,

but is obtained by personal performance on an electric musical instrument.

## Three Classes of Instruments

There are two fundamentals in connection with this comparatively new type of musical instrument—the production of an alternating current of any desired form and its modulation or systematic control. Alternating currents are required because they have a definite frequency and only such currents carry musical tone or pitch within themselves. The form or mode of control can be practically anything a musician desires. He can control any sort of tone, from a keyboard, a device like a string, a fret-board or even by merely waving his hand around in the air.



At the present time there are three classes of electric musical instruments available; rotating tone wheel; oscillating vacuum tubes; and electric translation of tuned vibrators such as strings.

The electric organ comes under the first heading; the second group include the Novachord, Solovox, Theremin; and the piano, guitar, banjo, violin, carillon, vibraphone and electric reed organ are in the third classification.

Perhaps the best known electric musical instrument is the modern organ which has no pipes, but whose tone is produced by electrical impulses, and which occupies less space than a small grand piano.

### Millions of Tonal Combinations

Everyone is familiar with the fact that sound travels in waves. In the organ the tones are created first as electric waves and then transformed into sound. These waves are generated by tone wheels about the size of a silver dollar which revolve at a constant speed close to small permanent magnets, each with a coil wound at one end. On the rim of each wheel is a toothed edge and, as the wheel rotates, these teeth disturb, at regular intervals, the magnetic field and a tiny electric current is induced in the coil. When the wave created by one of these wheels is amplified and made audible, the result is a pure tone. One of the outstanding features in this type of organ is that it has millions of tonal combinations.

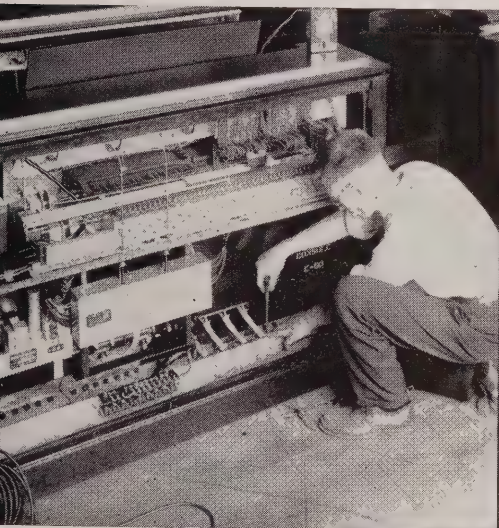
Just what happens when you depress one of the sixty-one keys on a standard keyboard is that you close a switch connecting one or a group of coils which are energized by

the tone wheels. Comprising assemblies of two wheels each, the forty-eight fundamental tones, found in this instrument, are mixed with a group of stops or stop switches to form various combinations of pitch to produce different tones. This is amplified by vacuum tubes and reproduced through loud speakers.

Due to the speed of electricity, key depressions are instantaneous. This differs from the pipe or reed organ in which there is a certain "lag" when the keys are pressed down. This space of time is necessary for the wind released by the key to actuate the pipe or reed through which the tone is created. For this reason, fast-moving music, formerly not practical for the organ can now be played on this new type of instrument as readily as on a piano.

### Dynamic Range

But more important than the method of producing tones is the ability to create different qualities of tone. In all other musical instruments the tone quality is determined by size, shape and materials used in construction. In building them the emphasis lies in the "voicing-out" of undesirable harmonics. In the electric organ the performer can regulate the harmonics to suit himself and, in this way, can create almost any tone or shade of tone he wishes and, of course, can emphasize the nuances he finds particularly pleasing. This has proven a great boon to the



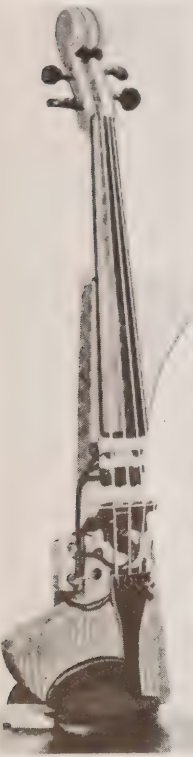
This technician (above) is working on the interior of an electric organ which uses the tone wheel principle.

Right: Kathleen Stokes, popular Canadian artist, is shown here at the console of an electric organ.





This illustration shows an experimental model of an electric violin



The Solovox, depicted here, is an auxiliary keyboard. On this board the pianist may play solo passages with one hand while accompanying himself on the piano with the other.



Here, in the quiet atmosphere of a chapel, is a compact electrostatic organ which is acclaimed for its pleasing "pipe organ" tone.

music world. The resonant volume of tone and dynamic range, from the merest whisper to a mighty surge of sound, have enabled musicians to produce entirely new effects. In this way electricity has been the direct means of widening the range of melodious expression. As one widely-known Canadian organist in an army camp remarked, "Why you can do anything with the darn thing."

## Cannot Get Out of Tune

Today thousands of these organs, both in this country and abroad, are being used in churches, homes, schools, musical academies and funeral chapels. To illustrate their increasing popularity, a manager of a large Toronto musical instrument firm, told Hydro News that the American Government had recently ordered one thousand of these instruments for army chapels.

Their size and mobility have made them particularly acceptable in the home and, regardless of atmospheric conditions, there is no possibility of them getting out of tune.

Sometimes pipes are installed to lend added dignity, but in an electric organ these are purely ornamental, as the acoustical effects come from tone cabinets which contain power amplifiers and speaker units. The number and size of these cabinets depend upon the dimensions and structure of the building in which the instrument is to be played and the amplification necessary.

It may be recalled that one of these organs was played daily under varying climatic conditions at the Canadian

National Exhibition, Toronto, at the inauguration of the band shell in 1937.

## Novachord And Solovox

The Novachord, although not intended to duplicate any existing musical instrument, can imitate almost any of them and occupies the space of a four-and-a-half foot square. Perhaps some of you have heard and enjoyed this instrument imitating a piano with a violin accompaniment. It is somewhat similar in design to the electric organ except that the tones are generated by a large number (over 160) of vacuum tube oscillators. The keyboard has seventy-two playing keys and tone regulation is accomplished by amplifier control tubes and resonant circuits. Its versatility and compactness make it particularly useful for radio studios.

Although it may be played independently, the Solovox is designed to be used as a musical adjunct to any piano. This instrument, which looks like a small piano keyboard, is quite an ingenious invention. It provides the pianist with a wide variety of solo effects, including the violin, 'cello, horns and many others. With this auxiliary keyboard he may play solo passages with the right hand while accompanying with the left. In some respects it resembles the Novachord in operation and principle. A single master oscillator feeds into a cascaded series of frequency dividing circuits. In the Solovox, however, the master oscillator is varied according to the key being depressed. For this



reason only one tone may be played at a time and chords are not possible except where these frequencies are related by octaves. The frequency dividers themselves are really controlled oscillators and not simply frequency divider tubes as in the Novachord.

## Music In The Air

We have all heard the expression, "music in the air," and the Theremin is a literal interpretation of this phrase. Invented by Leon Theremin, a Russian, who carried on all his experimental work in Russia, the Theremin or Aetherophon as it is sometimes called, came on the market about 1924. In this instrument two supersonic valve oscillators produce beat frequencies in the audio range and the desired frequency or pitch of the note is controlled by moving the hand within the electric field, volume being provided by space control. Starting and stopping of the notes is accomplished by means of a switch held in the other hand of the performer. A disadvantage of the Theremin, however, is the unfamiliar playing technique required and the fact that it is only a single toned instrument, but in the hands of an accomplished musician it can be very effective for solo work of slow tempo.

In appearance the electric piano is identical with the modern console model. The normal sound board is eliminated, however, and pick-ups, amplifiers, mixers, loud speaker and other devices are added to provide electrical reproduction. Again, as in all electric musical instruments, a much wider range of expression is permitted.

## Facilitates Reproduction

It is interesting to note how electricity has facilitated the reproduction and amplification of instrumental effects with less physical effort on the part of the artist. Authorities agree that this is particularly helpful in both solo and orchestral work.

"Electrified" stringed instruments, such as guitars and banjos, are equipped with a magnetic pick-up. Through this pick-up, which is placed under the bridge and strings, the notes are first amplified as electrical vibrations and then reproduced in a speaker as sounds or tones.

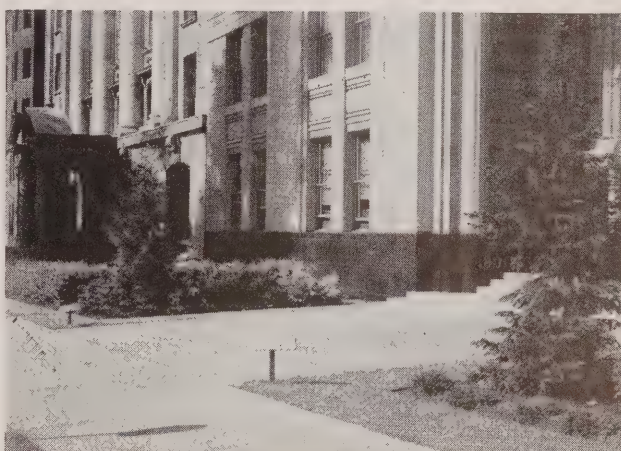
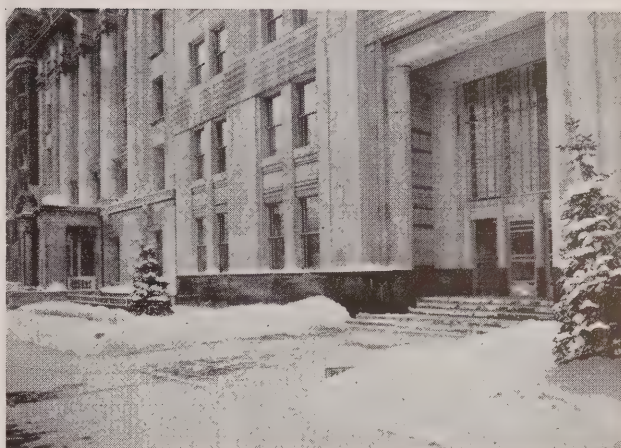
Electrical reproduction of violin music is achieved by means of a contact microphone which is usually attached to the body of the instrument, the pick-up being fed into an audio amplifier.

In the development of the electric carillon, tune coil vibrators, similar to clock chimes, are set into vibration, and after magneto-electric translation, their vibrations pass into high-power amplifiers and reproducers. Chimes used for broadcasting studios function in a similar manner, the output being fed into the broadcast system for time or other periodic announcements.

A vibraphone is an electrified version of the traditional xylophone and, here again, electricity has enhanced the volume and tonal qualities.

Then there is the electrostatic or reed organ which, it is claimed, reproduces the "ring" usually associated with the traditional pipe organ. While both are very similar from the standpoint of construction, there are differences in the results obtained. In the case of the electrostatic organ, however, the reed sounds are muffled to the point where they become mere vibrations, the output of which is transformed into sound by electrical rather than by mechanical means. In close proximity to each individual reed is a pick-up

## THEN AND NOW!



Remember when the mercury dipped below zero last March? The upper picture of the entrance to the H.E.P.C. Administration Building on University Avenue, Toronto, was taken on one of these bitterly cold days. The lower shot was taken on the hottest day in June when the thermometer climbed to 96.

screw, while a fairly high voltage, approximately 300 volts, connected through a filter, is applied to the reeds themselves. The reeds are blown by a motor-driven vacuum fan so that foot pedal operation is unnecessary. When the reed vibrates the voltage between the reed and the screw causes an audio frequency voltage to develop. This frequency is then amplified and reproduced in the speaker as a tone.

This method of equipping the reeds with electrostatic pick-up has made it possible to enrich the tonal qualities, increase the volume range, provide new timbres and still retain the beautiful tones of the pipe organ.

Another popular instrument, not included among the three types mentioned, is the gleamingly colourful juke box, which is an electro-amplified machine that plays records with a permanent needle.

It has not been the intention in this article to attempt to cover all musical instruments which have been "electrified," but to give some idea of the contribution electricity has made to the world of music and the tremendous possibilities it has opened up.

# POST-WAR PLANNING DISCUSSED AT DISTRICT 5 SUMMER MEETING

Approximately 125 Delegates Attend Business Session and Dinner at St. Catharines—Inspect DeCew Falls in Afternoon—Many Problems Reviewed—John Dibblee, H.E.P.C., is Guest Speaker

**T**HROUGH careful post-war planning now, the Ontario Municipal Electric Association can make an effective contribution to the economic welfare of the people of this province.

This belief was expressed by Kenneth A. Christie, K.C., president of the O.M.E.A. when addressing the summer meeting of District No. 5 association in the Leonard Hotel, St. Catharines, on June 9.

Nearly 125 delegates attended the luncheon and business session. Many topics including the standardization of electric range switches, payment of pensions to Hydro employees retained in service through the manpower shortage, and separate billing for service calls, were discussed. Later in the afternoon the party made a complete inspection of the new \$6,000,000 DeCew Falls development now nearing completion.

John Dibblee, assistant chief engineer, H.E.P.C., was guest speaker at the evening dinner. Others who spoke included Commissioner J. Albert Smith, H.E.P.C., Keith C. MacLeod, Stamford, president of District No. 5; mayor Charles Daley, H. A. Collins, and Dr. W. J. Chapman, St. Catharines.

Given in non-technical language, Mr. Dibblee's talk covered interesting characteristics of the new DeCew development and was illustrated with lantern slides.

This development, he pointed out, would be very similar in many respects to the Hydro's Queenston plant. When fully developed DeCew would utilize more than 280

feet of head as compared with Queenston's 295 feet.

## Adequate Water Supply

"There is, with only one unit in operation, a sufficient supply of water to run the plant at full capacity 24 hours each day without interfering with the old plant which will, for the present, continue to develop 60 cycle power. Later however, when the second unit is installed, the use of water will not be uniform. Then the artificial lakes which connect the plant with its source of supply, the Welland Canal, will afford valuable storage facilities.

"Looking at the old plant, the question might be asked why it was necessary to excavate 700,000 cubic yards of earth and rock and set the new plant so far back from the present bed of the river. The answer to that question is very simple," continued Mr. Dibblee. "Exploration of the foundation under the old powerhouse showed that the rock was 90 feet below the ground surface and that the powerhouse itself was founded on earth. When you think that we have concentrated in one generating unit 30 per cent more power than the entire existing 60-cycle plant produces and that the moving part of that one generating unit weighs 250 tons and revolves at 150 revolutions per minute, you will realize at once it required a solid rock foundation. As the rock descended at a very steep angle, it was necessary to move the powerhouse back 200 feet and excavate a pocket out of the rock cliff in order to secure a suitable rock foundation for it.

"Both the turbine and the generator were taken from

## HEAD TABLE GUESTS AT DISTRICT



P. B. Yates,  
St. Catharines.

Osborne Mitchell,  
Secretary, H.E.P.C.

Harry A. Collins,  
St. Catharines.

J. Albert Smith,  
H.E.P.C.

Mayor Charles Daley,  
St. Catharines.

K. C. MacLeod,  
Chairman, District



the Abitibi Canyon generating station in Northern Ontario acquired from the Abitibi Pulp and Paper Company where more generating units than are now required, having regard to the more uniform demand for power of the Commission's Abitibi System.

"The fact that this unit, so well suited to the DeCew Falls site, was available, turbine, generator and governor, made this project very attractive from the priorities point of view. It reduced the amount of critical materials, and of skilled labour required; it reduced the demand upon shop facilities of equipment producers and it also saved a good deal of time.

### Water Diverted

"With post-war conditions still unpredictable, it would be foolish to speculate when the next unit will be installed," the speaker remarked.

"The flow through the Welland Canal lessens the natural flow through the Niagara River and in that sense it constitutes a diversion of water from an international waterway; diversions of this character are regulated by Treaty and must have international sanction.

"The commission's right to a permanent water supply for the new 25-cycle power development at DeCew Falls, without reducing the permanent allotment for Niagara rests upon water diversions made by the commission from the Albany river into the Great Lakes basin, known as the Long Lac and Ogoki diversions.

"Control works regulate the discharge from the diversion channel and it can be terminated at any time and the water restored to its original channel.

"The descent to the sea of the Albany river and the surrounding country is so gradual and so uniformly dispersed that few if any sites exist at which sufficient waterfall is or can be concentrated for an economical power development. In sharp contrast the Nipigon, Niagara and St. Lawrence rivers afford concentrated waterfalls that are almost ideal for power development. The waters that will be diverted from the Albany river when the Ogoki diversion is completed will add to the power capable of economic de-



Included in this group are Carl D. Hanniwell, Niagara Falls, and Garnet A. Edwards, A. J. Brian and Gordon H. Fuller of Windsor.

velopment in their new water course, some 360,000 horsepower," he concluded.

### Membership Increases

Speaking of the membership of the association Mr. Christie declared that it had now gone over the 200 mark.

"We must study the economic problems of the Province and I believe that if we keep a vision before us, we can, in our own way make a very effective contribution to the economic welfare of the citizens of the Province of Ontario," he continued.

"We will be faced, after the cessation of hostilities, with the problem of finding an outlet for an abundant supply of electric power. We must find new methods of using that power so that the slack in the post-war period when the demands of war industry grow less may be absorbed.

"Already we have made some contribution to the welfare of our fellow citizens. Through the efforts of our committee on the standardization of electric range switches we have saved some considerable amount of money and vital war material. Other fields in which standardization

*(Continued on page 20)*

## O.M.E.A. SUMMER MEETING



John Dibblee,  
H.E.P.C.

Dr. W. J. Chapman,  
St. Catharines.

K. A. Christie, K.C.,  
President, O.M.E.A.

R. T. Jeffery,  
H.E.P.C.

Col. F. C. McCordick,  
St. Catharines.

W. B.  
St. Cath.

# Around the Hydro Circuit

## MANAGER AT SARNIA



C. L. McMann

**CLAUDE L. McMANN**, who was born in Richmond, Michigan, in 1888, was with the Chatham Hydro System for three years prior to coming to the Sarnia System. He was hired as a line-foreman, and rose to line superintendent. He served in that capacity for 25 years, and is now manager-superintendent. Mr. McMann came to Canada prior to the Great War and served with the Canadian Infantry Battalion.

## TEN YEARS' SERVICE

**EDWARD J. BLAKE**, a son of Erin, having been born in Kilkenny in 1878, has been on the Sarnia commission for ten years and on two occasions has been its chairman. He was also a member of the city council for three years and its mayor in 1934. He came to Canada with his parents at the age of seven and settled in the Point Edward and Sarnia district.



E. J. Blake

For a number of years he was an engineer on the Grand Trunk Railway, and for thirty-seven years was night superintendent with Imperial Oil, having been superannuated in 1941.

## H. B. KIMBER DIES

**HENRY BRIGHT KIMBER**, who passed away suddenly in his 52nd year while at Ward's Island, had been identified with the Toronto Hydro-Electric System for 30 years.

He resided at 15 Simpson Avenue, Toronto, was a veteran of the Great War, and affiliated with a number of fraternal organizations.

Born in Toronto, he was the son of the late George Kimber who was connected with the city treasurer's department for half a century. He attended Toronto public schools and Riverdale Collegiate and, in his youth, was active in amateur baseball and hockey.

Mr. Kimber was a sidesman at St. Matthew's Anglican church, a member of the executive of the Ward's Island Association, a member of Delta Lodge A.F. and A.M., and the Hydro War Veterans' Association.

Surviving are his widow, Adele Louise Hazelton Kimber; three sons, George, James, and David; his mother, Mrs. Janet Kimber, and four sisters, Ethel Carrie, Mrs. William J. Patterson, Mrs. Janet Ryan and Dorothy.

## KILLED IN ACTION

Ft. Lieut. W. A. Rider of London and P.O. George C. Goold of Ottawa have been reported killed while on operational flights over enemy territory.

Ft. Lieut. Rider, a native of London, Ont., joined the R.C.A.F. in 1937 after graduating from the University of Western Ont. During his vacation Rider served as a line-man for the London Rural Hydro Office.

P.O. Goold, the son of A. L. Goold, assistant district electrical inspector of the electrical inspection dept. at Ottawa, was born in the capital. He enlisted in the R.C.A.F. early in 1940.

## USED BICYCLE, BUGGY AND CUTTER

Present-day shortages of tires and gasoline and the increasing use of bicycles for H.E.P.C. patrol work have

revived memories in the mind of **F. V. MARTIN**, superintendent of the Essex rural power district, who recalls the days when he went "on patrol" with a horse and buggy in the summer months and horse and cutter in the winter. He also remembers carrying a shovel, spoon, bar, test-set, spurs and belt on a bicycle when he set out to inspect lines.



F. V. Martin

Mr. Martin, who has been with the Commission for over thirty years, was born in 1887 at Oxford, England.

In the spring of 1911 he migrated to Canada and became identified with the Commission, doing reconstruction work. The following year he was transferred to the construction department and was engaged in providing Hydro service to Beachville, the first police village in Ontario. The official ceremony marking the inauguration of service to Beachville was attended by the late Sir Adam Beck.

Later Mr. Martin was transferred to Walkerville as patrolman for the operating department at Essex station, and in 1924 he joined the staff of the municipal department as superintendent of the Essex rural power district, which position he still holds.

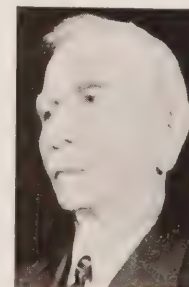
## VETERAN COMMISSIONER

Although 83 years of age, **JOHN FROOK** is still an active member of the Hanover Public Utilities Commission.

When Hanover became a Hydro town he was elected by acclamation on the first commission, and has been a member since that time, occupying the position of chairman for 18 years.

He served on the local council from 1902 to 1906 and became Hanover's first deputy reeve in 1914, a position which he held until 1917.

Mr. Frook is particularly interested in the reforestation project at Hanover's water works which contains some 60 acres set out in spruce and pines.



John Frook



# Around the Hydro Circuit

## TRIBUTE TO "TROUBLE SHOOTERS"

During the past winter, with its record-breaking snowfalls and prolonged storms, Hydro repair crews played a gallant role in restoring interrupted service to customers in all parts of the Province.

A series of severe snowstorms in western Ontario, centering around the St. Marys rural power district during February, gave linemen in that area one of their stiffest assignments. Battling against low visibility, high winds and ice, with mammoth drifts filling in County roads repeatedly, repair crews worked almost to the point of exhaustion to keep electric power flowing into homes, farms and municipalities. A letter received by the H.E.P.C. office at Mitchell, in tribute to the line repair staff, reads as follows:

"Dear Sirs: This is a letter of appreciation. The storm disrupted our power service last night. It was indeed a welcome sight to see the lights and power service available tonight around five o'clock.

Electric power has become an absolute necessity on many farms today. We, ourselves, depend on it for lights, power for pumping water, for operating a chopper and a milker, and for our dairy herd of thirty milking cows. With the present farm labour shortage, Hydro has become our first and most important labour-saver; indeed it is essential to our farm operations.

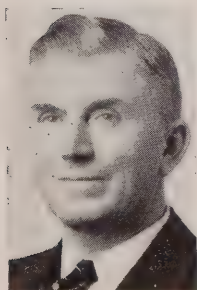
We know that the storm must have made the work of the repair crew most difficult and hazardous. We, naturally, therefore appreciate more than ever the prompt service that they have given. We wish you to know that your prompt attention during this storm has meant a great deal to us, and so I venture this letter of sincere appreciation and thanks. Ward Bolton."

## SARNIA COMMISSIONER

Now serving his fourth year as a member of the Sarnia Hydro commission, **JOHN T. BARNES**, a native of Oil Springs, Ontario, was born in 1896.

His interest in municipal affairs led him to contest a seat on the Sarnia city council and for four years he served as alderman and three years as mayor. Retiring from the mayor's chair in 1942 he was elected to the Hydro commission.

This year he was named a director of District No. 8 O.M.E.A. During the Great War he served with the American Army Medical Corps.



J. T. Barnes

## CHAIRMAN AT SARNIA

Born in Bothwell in 1876, **GEORGE N. GALLO-WAY**, chairman of the Sarnia Hydro commission, has a record of 18 years' Hydro service, during which he has headed the commission on four occasions.



G. N. Galloway

Soon after leaving school he was bitten by the railway bug and became an engineer. He served in that capacity until he was superannuated in 1941 after 42 years' service.

Mr. Galloway's hobbies are horticulture and sports, and he is also particularly interested in municipal affairs, and has served the people of Sarnia for five years as councillor and one year as mayor.

## VICE-CHAIRMAN AT SARNIA

**RICHARD M. DURNFORD**, vice-chairman of the Sarnia Hydro-Electric System, was born in 1893 at Oil Springs, Ontario. He was educated in Sarnia public schools and Kitchener Technical School. After completing a course at Toronto technical school he was granted a certificate to teach in technical schools in Ontario.



Richard M. Durnford

He served his machinist apprenticeship on the railway and for five years was assistant supervisor of apprentices. Later he served for nine years as an instructor of machine shop practice at Sarnia Technical School.

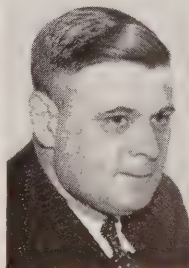
After managing McPhillips Limited Electrical Merchandiser's store for ten years, he was recalled two and a half years ago, to the teaching profession by the government and is now an instructor in the war emergency classes in Sarnia.

Prior to his election to the Sarnia Hydro-Electric Commission he served two years on the local board of education.

## MEET MAYOR HIPPLE

A veteran of the Great War, mayor **W. CARLISLE HIPPLE** of Sarnia joined the 55th battery of the Canadian Field Artillery in 1916, was in Germany with the army of occupation, and was discharged in 1919 with the rank of sergeant.

Born in Sarnia in 1898, Mr. Hipple served as an alderman for seven years, and this year was elevated to the mayor's chair. Second only to his liking for municipal affairs is his interest in sports of all kinds.



W. C. Hipple



1. Convention delegates inspect one of the generators being installed at DeCew Falls. Charles Austin, secretary of District No. 5 O.M.E.A., got right inside to see what was being done.
2. Roy Pierson, chairman of Brantford Township Commission, was emerging from the water chamber hatch at DeCew when the camera arrived on the scene.
3. Caught by the candid camera in a group of delegates at one of the tables were C. E. Kirkby and A. McKnight.
4. At another table sat Nelles E. McCann, Frank Springer, T. W. Houtby, William Watterson, H. D. Rothwell, Arthur Robinson, J. J. Jeffery and Jason Sherk.
5. This shot was taken during the afternoon business session. Roy Pierson, N. E. Macpherson, George Unger, Fred Barraclough and James Rennie can be seen in the group.



(Continued from page 17)

may be accomplished are already under consideration and a still further contribution to the welfare of our citizens may be expected as a result of its efforts. In this connection," said Mr. Christie, "I would like to pay tribute to the work of Garnet A. Edwards, chairman of the Hydro Division of the Windsor Utilities Commission, who heads that committee."

Several resolutions were passed during the afternoon business session. Among them was one seeking to have hydro employees who have reached pension age but who remain in the service of their various commissions because of the manpower shortage, receive pension payments as well as salary. This resolution was passed along to the association executive for consideration.

The association will seek permission from the Department of National Revenue to charge for service calls on the regular bi-monthly billing and to

(Continued on page 26)



## April, May Primary Loads Show Large Increases

Primary power load on all Hydro systems during April and May of the present year increased substantially over that for the corresponding months of 1942.

Calculated on the maximum 20-minute peak horsepower load for the particular months, April, 1943, recorded an increase of 110,000 horsepower or 5.2 per cent over the same period last year, while the May load advanced by 60,000 horsepower or 2.8 per cent. These figures, incorporated in H.E.P.C. monthly load summaries, portray load development on the four Hydro systems and the Northern Ontario Properties.

Load growth in the Eastern Ontario system featured both months, with increases of 20,000 horsepower and 16,000 horsepower for April and May, 1943, over the respective months of 1942.

The total primary power load of 2,241,771 horsepower during April of the present year dropped to 2,206,134 horsepower during May, reflecting the advent of increased hours of daylight.

Combined primary and secondary loads also showed a gain, with the April, 1942, load of 2,302,445 horsepower rising to 2,374,170 horsepower during April of this year, while the May, 1942, load of 2,300,499 horsepower stepped up by 1.7 per cent, or approximately 40,000 horsepower, during May, 1943.

### PRIMARY LOADS

	Maximum 20-Min. Peak H.P.		Per Cent
	April, 1943	April, 1942	Increase
Niagara System .....	1,693,432	1,607,775	5.3
Eastern Ontario System .....	191,287	170,958	11.9
Georgian Bay System .....	46,272	43,934	5.3
Thunder Bay System .....	99,102	106,568	7.0
Northern Ontario Properties .....	211,678	202,264	4.7
Total of All Systems .....	2,241,771	2,131,499	5.2

### PRIMARY AND SECONDARY LOADS

	Maximum 20-Min. Peak H.P.		Per Cent
	April, 1943	April, 1942	Increase
Niagara System .....	1,747,587	1,699,062	2.9
Eastern Ontario System .....	191,287	172,077	11.2
Georgian Bay System .....	46,272	44,256	4.6
Thunder Bay System .....	129,759	131,166	1.1
Northern Ontario Properties .....	259,265	255,884	1.3
Total of All Systems .....	2,374,170	2,302,445	3.1

### PRIMARY AND SECONDARY LOADS

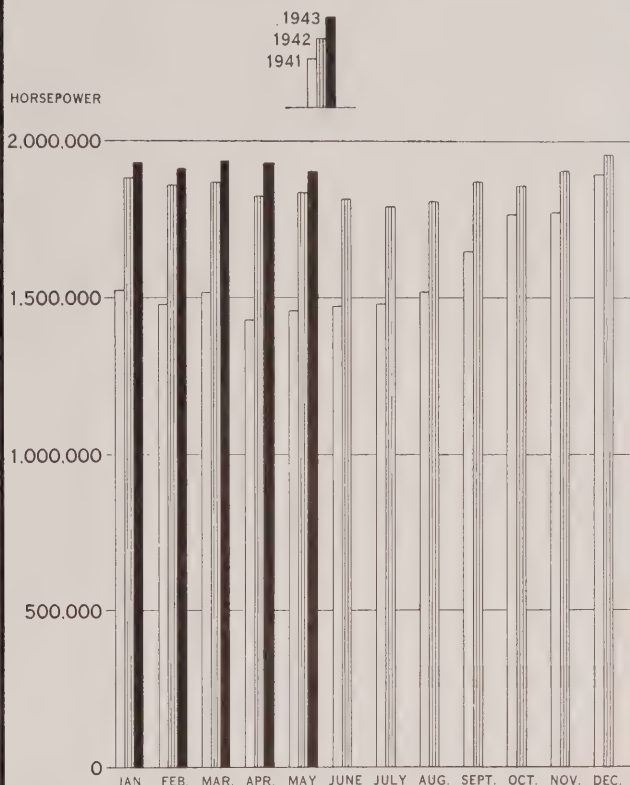
	Maximum 20-Min. Peak H.P.		Per Cent
	May, 1943	May, 1942	Increase
Niagara System .....	1,716,756	1,685,121	1.9
Eastern Ontario System .....	198,993	180,696	10.1
Georgian Bay System .....	47,119	45,224	4.2
Thunder Bay System .....	121,059	131,448	7.9
Northern Ontario Properties .....	256,497	258,010	.6
Total of All Systems .....	2,340,424	2,300,499	1.7

(See chart (right) for May primary load figures.)

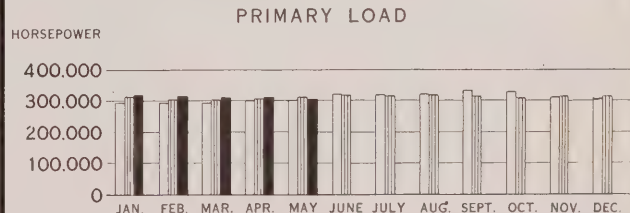
### G. D. COHOON PASSES

Following a prolonged illness, GEORGE DWIGHT COHOON, who was for many years with the Toronto Hydro-Electric System, passed away at his home on Close Avenue recently. Born near Aylmer, Ontario, Mr. Cohoon came to Toronto as a young man and joined the maintenance staff of the Toronto System.

## SOUTHERN ONTARIO SYSTEMS NIAGARA — GEORGIAN BAY — EASTERN ONTARIO PRIMARY LOAD



## NORTHERN ONTARIO PROPERTIES AND THUNDER BAY SYSTEM PRIMARY LOAD



### PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	MAY, 1943	MAY, 1942	
NIAGARA SYSTEM .....	1,659,651	1,607,909	+ 3.2
GEORGIAN BAY SYSTEM .....	47,119	45,224	+ 4.2
EASTERN ONTARIO SYSTEM .....	196,982	180,696	+ 9.0
THUNDER BAY SYSTEM .....	102,051	107,654	- 5.2
NORTHERN ONTARIO PROPERTIES .....	200,331	204,391	- 2.0
TOTAL .....	2,206,134	2,145,874	+ 2.8

ANNUAL  
IRIS  
SHOW

**I**LLUSTRATED here are three of the prize winning entries in the annual Iris Show, conducted recently under the auspices of the horticultural section of the Ontario Hydro-Electric Club. In the centre is a first prize basket of spring flowers, exhibited by Mrs. Thomas H. Hogg, who also won two other "firsts." At the right is an "Ivory Tower," judged the best iris in the show and displayed by Major J. C. Murton of the property department,

who also won the sweepstake prize, as well as five "firsts" and four "seconds." On the left is shown a basket of spring flowers which won a "second" for A. B. Hayman. Other prize winners were: J. F. MacLaren, five "firsts;" W. H. Carr, three "firsts;" Miss Shirley McCarten, one "first" and one "second;" A. H. Frampton, one "first" and one "second;" Miss E. M. Grader, two "seconds;" H. R. Hill, one "second;" and A. G. Lang, one "second." Among the many varieties featured in the show was an interesting exhibit sent in by H. L. Hutt of Georgetown. Altogether there were 84 entries, divided into 23 classes. The success of the show is attributed, in large measure, to the fine co-operation of F. A. Robertson and his administration staff. Approximately \$35 for the club's Consolidated War Services Fund was realized from draw tickets sold on the flowers, which were divided into fourteen bouquets.

## VICTORY GARDEN IN THE BUSH

**T**HIS is not a scene from the third act of "Ah Wilderness." The figure leaning nonchalantly on his shovel in this photograph is Joe Young, a Hydro patrolman



in far northern Ontario between the Uchi switching station and the Crow River transformer station. Contrary to the

pictorial evidence, Joe is not clearing the heavily timbered land for a new substation. Believe it or not, he's happily engaged in digging his new victory garden!

Joe Young, 38 years old, is a hardy son of Ayr County, Scotland. When he and his wife first came to the district in 1939, the H.E.P.C. construction department cleared the site out of virgin bush country, leaving only stumps and a rough surface of woodland soil. For the past two summers Joe has been rooting out stumps and trying to level an area for a victory garden, and two months ago he sent in an application for registration in the Ontario Hydro-Electric Club's victory garden campaign.

Located on the south shore of Kawinigans Lake, about 25 miles west of the Central Patricia Gold Mines, the Young victory garden will some day, according to Joe, possess a flourishing array of potatoes, lettuce, radishes, carrots and beans.

Nobody comes here to dig for Joe—but he'll still have a real victory garden!





**C**OMplete victory in the victory garden means more than winning the battle against bugs and weeds and having a plentiful supply of fresh, vitamin-rich vegetables and fruits for summer salads and dinners.



Complete victory will be achieved only when housewives, who have these gardens, take full advantage of their good fortune by doing as much canning and preserving as possible.

This month we shall discuss the canning of vegetables. There is nothing mysterious or difficult about it provided the housewife follows

Edithemmu Muir carefully these simple rules:

1. Can as soon as possible, preferably within an hour or two after gathering, in order to prevent spoilage.
2. Make sure your hands, equipment, jars and product are thoroughly clean.
3. Use of pint jars ensures thorough cooking through to centre.
4. Parboil or precook vegetables, and pack while hot into sterile jars.
5. Work quickly; pack vegetables loosely.
6. Use recommended canning methods — pressure cooker and hot water bath for vegetables, and process according to table.
7. Test the seals, and store canned vegetables in a cool, dry place.

### Essential Canning Steps

First, equipment should be checked, each jar being inspected for cracks or chips in the rim of the sealer or cover. Use screw-top, spring-top or vacuum top sealers.

A pre-war rubber can be tested by bending it double. If it springs back it is satisfactory for re-use. Do not use one which fails to spring back or if it is cracked. A war-grade rubber ring cannot be tested. Once they have been used, these rings should be discarded.

Kitchen utensils required are kettle, sharp knives, a colander, measuring cup, clean towels, pie plate, wooden spoon, bowls, a wide-mouthed funnel and a sealer lifter. All these utensils should be thoroughly washed and scalded.

Processing equipment may be a pressure cooker, wash boiler, large preserving kettle or galvanized iron pail. The utensil should be deeper than the jars so that the water will cover them to the depth of an inch or two. The container must be equipped with a tight-fitting lid. (It may be necessary to improvise one.) A wire rack, a shingle or chopping board may be used in the bottom of the processor.

Sealers and tops should be scrubbed thoroughly in soapy water, using a good stiff brush. Even if the jars were washed before storing, it is advisable to wash them again and then rinse.

To sterilize half fill each jar with clear water, place glass tops in position and stand the sealers on a rack in the boiler. Add spoons, a knife, enamel bowl and funnel. Surround with water, bring to the boiling point and boil for fifteen minutes.

An alternative method for sterilizing jars is to place the clean jars, tops and other articles in a pre-heated electric oven (300 degrees) for thirty minutes.

Rubber rings and metal caps have a sealing compound on them and they are sterilized by pouring boiling water over them and allowing to stand for five minutes.

### Washing of Vegetables

Now we come to the washing of the vegetables—a point which cannot be stressed too much. The outsides must be washed, the insides are sterile. After stems have been removed and pods scrubbed, the vegetables should be washed in two or three waters. (Do not wash too many at once.) This will help prevent spoilage. Lift from the wash water instead of draining off, and put into a sterilized bowl. At this point, it is important to wash one's hands. Next, cut the vegetables into a uniform size with a sterilized knife and place them in a kettle.

Pre-cooking shrinks the vegetables, allows a better pack and ensures a quick, thorough heat penetration. The vegetables covered with boiling water are brought to the boiling point. A chart, which accompanies this article, gives the cooking time for various vegetables.

After pre-cooking, the vegetables are put into the sterilized jars. The sealers should be placed on a scalded pie plate, removing one sealer at a time from the sterilizer. Place the rubber ring on the jar and insert funnel. Work quickly. Pack the vegetables loosely to allow for expansion and to ensure sterilization. Pour the boiling liquid, used for the pre-cooking, into the jar until it is completely filled. Slide the sterilized knife down the side of the jar to remove air. Add a half teaspoonful of salt, place the glass top on and partially seal. There is a danger of breakage if the jars are completely sealed. With screw-top sealers, screw tight and then unscrew half a turn. With wire clamp sealers, adjust the top but do not spring down the lower one. On vacuum sealers, adjust metal clamps.

### Processing Or Sterilizing

Housewives who own a pressure cooker for processing vegetables can render a patriotic service by loaning it or arranging canning "bees". The principal points to watch are: (1) the amount of boiling water—have sufficient to provide steam for the specified time; (2) keep pressure constant by regulating heat; (3) let stand sufficient time before opening; (4) tilt cover away from you to avoid steam coming into face.

In using a boiling water bath set filled sealers on the rack. Do not allow them to touch each other. Pour hot water down the side of utensil until the sealers are two inches below the level of the water. Place cover on boiler or kettle. Count time of sterilization from the time the water boils. Keep the water boiling. Add boiling water to keep sealers covered.

For tomatoes an electric oven with thermostat control

(Continued on page 24)

## Thirty-Fifth Annual Report Now Being Distributed

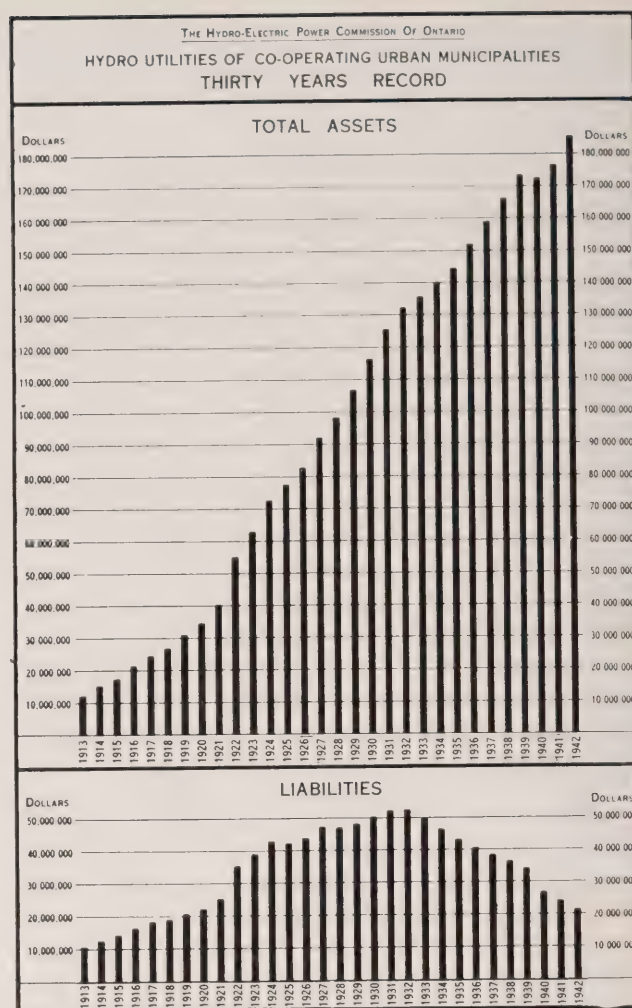
There are now 116 Hydro utilities which have no debentures unpaid, and more than 230 of the 297 urban Hydro utilities in Ontario have quick assets exceeding their total liabilities and are thus "out of debt."

These facts are revealed in the Commission's Thirty-Fifth Annual Report, which is just off the press and is now being distributed to the partner municipalities.

In his introduction, Dr. Thomas H. Hogg, chairman and chief engineer, shows that the people of Ontario have a capital investment of \$483 million in the Hydro undertaking, backed by reserves of \$290 million; of these amounts, \$128 million and \$107 million represent the assets and reserves of the co-operating municipalities in their Hydro utilities.

As shown in the accompanying diagram, covering a period of thirty years, the regular fulfilment of debt retirement schedules continued to reduce liabilities during 1942. Leaving out of consideration the equity of \$57 million which the local utilities have acquired in the power supply facilities of The Hydro-Electric Power Commission by payments in the cost of power, the percentage of net debt to total assets of the 297 local Hydro utilities is now less than 12 per cent.

In the Report attention is drawn to the completion of many hydro-electric developments and the extension of transmission and distribution facilities and it is pointed out that the sound policies followed in adhering to high standards of construction and equipment are yielding rich dividends in freedom from breakdowns under the greatly increased loads of wartime.



### HYDRO HOME FORUM

(Continued from page 23)

is the most satisfactory method. Pre-heat the oven to the required temperature (275°). Place tomatoes, packed in sterilized jars, on shelf which is about two inches from the lower element. Arrange sealers two inches apart. Sterilization time is counted when oven has returned to the required temperature after placing sealers in it.

#### Sealing

To avoid over-processing, remove sealers as soon as time is up. Tighten tops. Place on table to cool, several inches apart.

During the first fifteen minutes after removal, keep a watchful eye on the sealers. An imperfect seal may be detected by bubbles collecting at the rim or a slight hissing sound. If this occurs, have a sterilized knife and glass top within reach, open the jar, remove any food particle on rubber or edge of glass and reseal the glass top in another position, or change the glass top if it does not appear to fit—doing this quickly; adjust the screw top without adding liquid.

The Consumer Section of the Dominion Department of Agriculture recommends inverting the sealers for a few minutes to test for leakage. If a leak is found, remove the cover, see that there are no food particles on rim. Put on a new sterilized rubber seal, and invert to test for leakage.

If seal is satisfactory, sterilize a quarter of the time allowed for the particular product.

If the product shrinks considerably there will be a space at the top of the sealer. Do not open the sealer. The contents are sterile and will keep perfectly.

Wipe off jars. Label and date each jar. Store in a cool, dark dry place, or wrap each sealer in newspaper. Examine one week after canning to see if every sealer is in order.

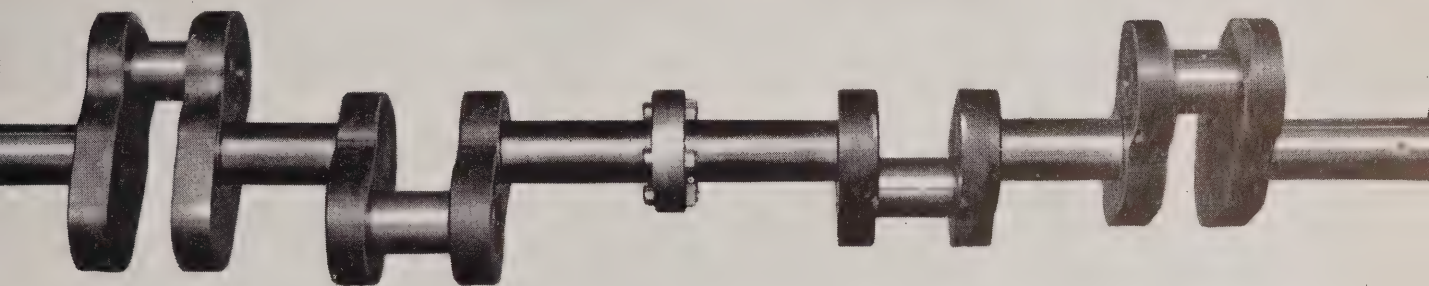
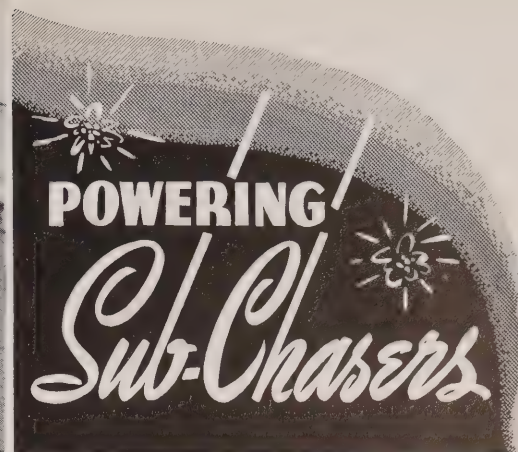
#### Time Chart For Canning Vegetables

Product	Pre-cook	Pressure Cooker	Water Bath
Asparagus	4 mins.	10 lbs. 35 mins. 15 lbs.	2 hrs.
Beans (with tomato juice)	2 mins.	35 mins. 15 lbs.	1½ hrs.
Beans	3 mins.	40 mins. 15 lbs.	3 hrs.
Beets (whole)	15 mins.	40 mins. 10 lbs.	1½ hrs.
Corn	1 min.	30 mins.	1 hr.
Greens	steam 5 mins.		3 hrs.
Peas	3 mins.	15 lbs. 60 mins.	3 hrs.
Pumpkin) Squash)	till soft	15 lbs. 60 mins.	3 hrs.





A Canadian corvette on the high seas.



This is a completed crankshaft for one of the 2,750 h.p. single screw corvette engines.

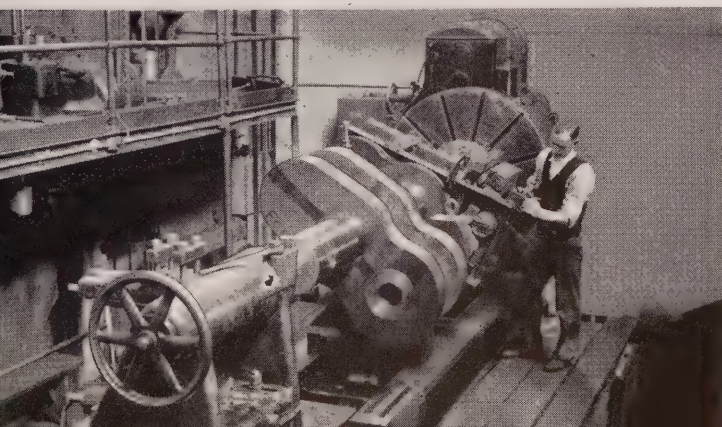
**H**YDRO is making its contribution to the glorious epics now being chronicled in the annals of Canada's Navy by Canadian-built corvettes which are playing a major role in fighting the enemy's sea-roving "wolf-packs."

Right in a Hydro machine shop many of the crankshafts are being turned out for these trim, sub-chasing craft which sweep over the heaving sea lanes, day in and day out, keeping constant vigil for Hitler's tin fish.

#### Backbones For Marines Engines

In this shop, amidst the busy hum of water-driven generators and the thundering roar of the mighty Niagara river, some 300 feet below ground level, Hydro engineers and machinists are fabricating the backbones of the 2,750 h.p. marine engines. Accompanying this article are photographs which depict some of the operations involved in the building of corvette crankshafts.

Preliminary machining on a quarter section of corvette crankshaft.



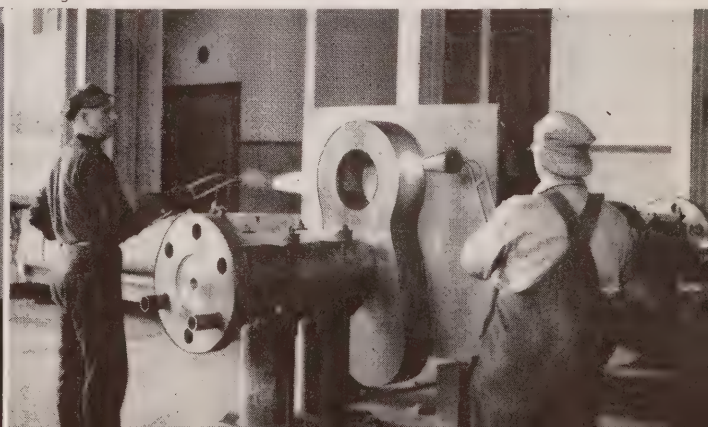
As in any assembly job, each part of the crankshaft is prepared separately and then brought together with other units at the proper time to form a completed whole, stated W. R. Harmer, H.E.P.C., Co-ordinator for the Ontario Public Utilities Wartime Workshop Board.

Crankshaft segments and crankpins are turned to the exact diameter ( $10\frac{1}{2}$ ""); crankshaft webs are cut to size, finish machined and bored for the crankpins and crankshaft parts.

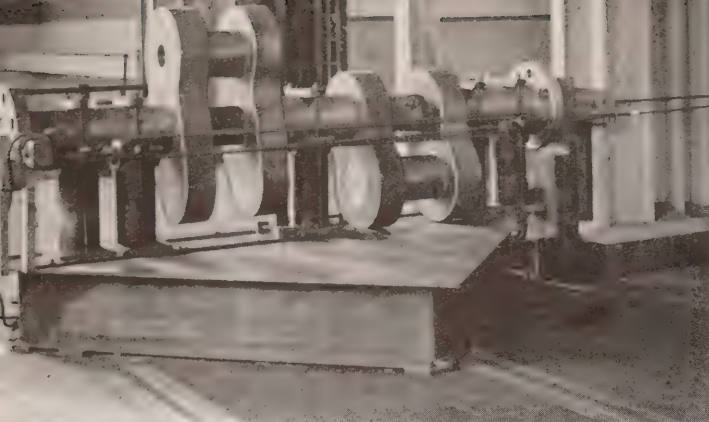
#### Assembled In Sections

After the unit parts have been machined, the most exacting care has to be taken in the assembly. Each set of webs and crankpins has to be assembled at the proper throw angle to produce the correct timing for each piston. The assembly job is done in sections. A shaft section and crankpin is shrunk into a web. To do this the web is heated in an electric oven with a final heat-up by means

This is the final heat-up of a web prior to shrinking-in the crank pin.





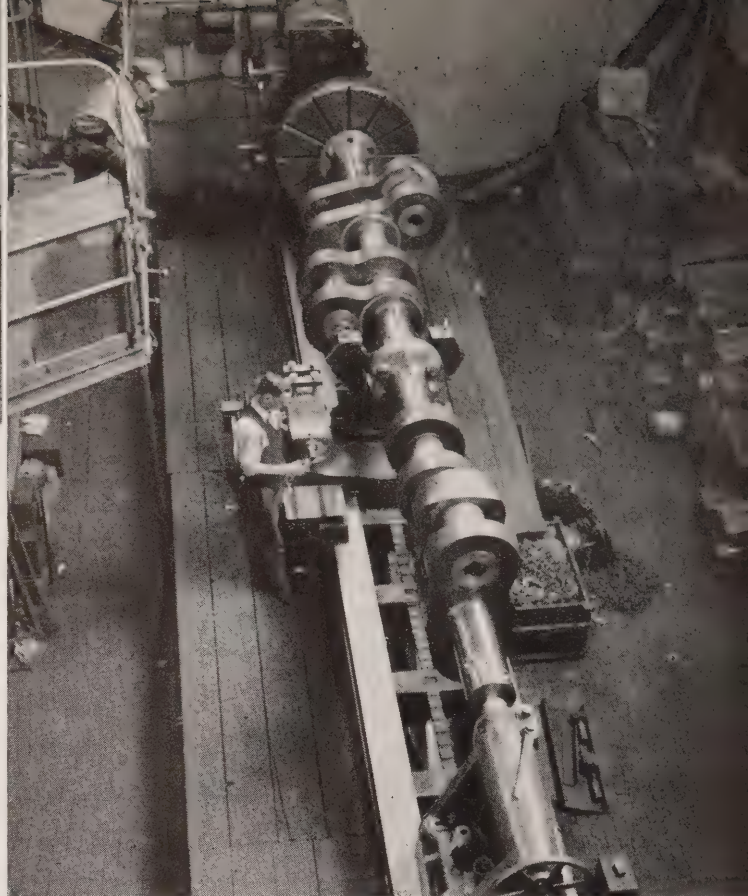


A subsequent operation in the assembly of a corvette crankshaft is shown in the above illustration. The previously heated web section is held in position while cooling after having been "shrunk-in."

of kerosene blow torches (in some crankshaft assemblies this procedure was reversed and dry ice was used to shrink the crankpins, rather than expand the web bores). After the end of the shaft segment, web and crankpin have been shrunk together, the section is placed in a special holding fixture. The web of the next fabricated section is then heated and quickly and firmly attached to a second holding fixture. With the aid of block and tackle this section is drawn into position and allowed to cool. This process is repeated until each half of the crankshaft has been assembled. The two halves are then joined together by means of a bolted coupling and the complete shaft, over 21 feet in length and weighing approximately  $8\frac{1}{2}$  tons, is placed in a large lathe for final machining.

### An Important Contribution

After having been "precision tested" and passed by a naval inspector, the crankshaft is shipped to the engine builder where it is fitted into the engine and subjected to exacting tests. When this has been done, the engine is dismantled and shipped in sections to the yards where it is installed in a waiting corvette. Additional tests follow



The corvette crankshaft (right) undergoes final machining in a 25-foot lathe with a 61-inch swing.

and then another sub-chaser is ready to play its part in the fight for freedom.

Hydro shops in common with other machine shops associated with the Public Utilities Wartime Workshop Board throughout Ontario are thus making an important contribution to Canada's war production programme.

## POST WAR PLANNING

*(Continued from page 20)*

charges sales tax or not as the department instructs.

It was pointed out by members of the St. Catharines Delegation that according to a recent ruling from the War-time Prices and Trade Board, a separate invoice must be rendered for these service calls. The additional work involved, and with staffs so short-handed, the charge would cost more to collect than it would cost to give the service free.

The association was also asked to approach the Dominion Power Controller seeking permission for storekeepers to light their window displays on Saturday nights.

The H.E.P.C. personnel attending the event were Commissioner J. Albert Smith, R. T. Jeffery, assistant chief municipal engineer; Osborne Mitchell, secretary; John Dibble, assistant chief engineer; J. J. Jeffery, H. D. Rothwell, A. S. Robertson, C. W. Richardson, Kenneth Brown, William Rattray and Clare Neal.

Previous business engagements prevented the attendance of Dr. Thomas H. Hogg, chairman and chief engineer, and commissioner W. L. Houck of the H.E.P.C.

## There Were Two Mice!

This time curiosity killed mice!

It happened in Etobicoke Township recently when two of the "wee beasties" came upon a Hydro hot water heater switch box. They examined the box and found a small aperture—just large enough for them to squeeze through—and decided to explore.

They were so shocked at what they found inside that their exploring days are now over.

The remains were discovered by Hydro men who were sent to repair the heater.





# Lighter Lines

"Pop, what's a grudge?"

"It's what yiz keep an automobile in."

\* \* \*

She still talked to her long suffering friends about her pre-war tour of Europe. "Paris," she gushed reminiscently, "is simply wonderful. The people are so well educated. Why, even the street cleaners speak French."

\* \* \*

The tender-hearted young lady was on her first fishing expedition. She watched her escort pull a healthy looking trout out of the bubbling brook. "But isn't it cruel?" she asked.

"Naw," replied the angler scornfully. "He likes it. Look at him wagging his tail."

\* \* \*

The moving picture usherette was in the dentist's chair.

"Now miss," asked the dentist, "which tooth is giving you all the trouble?"

"Second from the left in the balcony," was the answer.

\* \* \*

Mrs. Malone: "What did your husband die of?"

Mrs. Flanagan: "Gangrene, it was, Mrs. Malone."

Mrs. Malone: "Thank hivins for the colour, anyway Mrs. Flanagan."



"A man outside wants the names of all you gentlemen who were raised on farms!"

The mistress asked the new cook how she liked the electric range and heater.

"Oh! They're wonderful mum. It's three weeks since they were put in and neither of them has gone out since," she replied.

\* \* \*

"Is you de reprobate jedge?"

"Well I am the probate judge, if that's what you mean."

"Yassuh, dat'sit. Ah' spect. Well, Mistuh Jedge, it's like dis — mah husband has done died detested, and lef' me with seben little infidels, and Ah wants to be 'pointed executioner."

\* \* \*

Peering into the fog, the Captain saw a man leaning on a rail only a few yards away. "You confounded fool, where in blazes do you think you're going? I've got the right of way."

"Could be, guv'nor could be," was the sardonic reply, "but this ain't no bloomin' ship. This 'ere's a light'ouse."

\* \* \*

The Colonel noticed a long queue of men outside one of the stables. Each had a lump of sugar.

"I'm glad to see you love animals so much," he remarked to one recruit. "I suppose the horse you're giving the sugar to is the pet of the regiment!"

"Not 'arf he ain't, Sir," replied the recruit. "He's the one what kicked the sergeant."

\* \* \*

"Hey, Sharpe! How did your tulip bed come up this Spring?"

"With the aid of Smith's Springer Spaniel!"

\* \* \*

Conductor: "What's that your hold-ing on your lap?"

Passenger: "It's an unexploded bomb I'm taking to the police station."

Conductor: "Goodness man! Put it under the seat."

\* \* \*

"You must tiptoe upstairs and take a look at little Mary before she is asleep," said the proud mother.

The visitor followed up to the nursery. The two looked in; there was the little girl on her knees beside the bed.

"Isn't that a picture!" gushed the fond mother. "Innocence, saying its prayers to its Heavenly Father."

Just then the little girl's voice floated out to them: "Where in de debbil did I leave dat dolly?"

\* \* \*

"Eyes right!" thundered the Negro Lieutenant.

"You's wrong!" came from the back ranks of the black troops.

\* \* \*

"I don't know why the men grumble. This soup is excellent."

"They wouldn't grumble sir, if the cook would admit it is soup, but he insists it's coffee."

\* \* \*

A week after a small boy had started school he said: "Mummy, teacher was asking me all about you and daddy, and if I had any brothers or sisters."

"I am glad she is taking so much interest," replied his mother. "What did you tell her?"

"I said I was an only child."

"What did she say to that," his mother asked.

"Just, 'thank goodness'."



"I'm giving a little dinner party tonight, Mr. Shultz, and you're invited!"

# A THOUSAND MORE HYDRO FARMS

**H**YDRO power, which is working day and night in Ontario's network of war-gear'd plants, is also rendering untiring service on thousands of farms across the Province—helping to speed the production of vital food supplies.

Shortages in essential metals, such as steel, copper and aluminum, required in producing war equipment but also necessary for electrical service, halted the rural extension programme until recently when, following representations by The Hydro-Electric Power Commission to Dominion Controllers, the ban was modified. Now it is possible to provide electric service to those farms where the centre of the power load (i.e. the main buildings) is within 600 feet of an existing hydro distribution line, provided the farmers concerned can show that electrical service would materially increase the production of foods in short supply, or prevent the diminution of present food production. To date, over 1,000 farms coming within the specified distance limitation, have been able to do this. Other applications are being individually considered.

The reason rural lines were among the first to be affected by the growing scarcity of materials is that it takes a relatively large amount of wire and equipment, using materials urgently needed for war purposes, to serve one farm customer. Furthermore, it is a fact that after incurring the initial expense of wiring and installation most farmers are forced to move slowly in acquiring the additional electrical equipment that benefits food production. Nevertheless, it is a fact that in many cases throughout the Province farmers have been forced to sell their herds owing to labour shortage. The new ruling therefore, which will allow the Commission to give service to over 1,000 additional farms, will materially assist in maintaining our food supply.

## Much Pioneering and Experimental Work

The important role which electricity is playing today down on the farm emphasizes the fact that rural Ontario is one of the best electrified farming areas in the world. The foundation for this great achievement was laid in the decade 1911 to 1920 when the great network of transmission lines serving urban municipalities was first constructed throughout the length and breadth of the Province.

During this period, also, much pioneering experimental work in farm electrical service was carried on. As early as 1912 Sir Adam Beck was explaining to visitors to a Hydro inauguration the hope that rural districts could be served, and at many country fairs and exhibitions in that year farm equipment, electrically operated, was demonstrated. In the late summer of 1912, the Commission constructed two outfits to demonstrate electric threshing and silo filling.

After a brief interval of adjustment following the last war, the Hydro Commission, in co-operation with the Provincial Government and with the goodwill of urban municipal partners in the undertaking, arranged for an amendment to the Power Commission Act, providing for the



When Hydro comes to the farm it means the farmer can accomplish more work in less time and with a minimum of effort. It also enables the farmer's wife to have all the comforts and conveniences of her city cousin.

formation of rural power districts. This was in 1920. In 1921, the Rural Hydro Electric Distribution Act provided for the payment of a grant-in-aid of 50 per cent of the capital cost of rural primary lines. From this date rural electrical service forged ahead. In 1924 the 50 per cent grant-in-aid was extended to include distribution equipment.

Prior to 1921, rural consumers served through certain municipal utilities numbered less than 3,000. Compared with this early growth, the progress during the next ten years was phenomenal, especially in the boom period of 1926 to 1931. By the end of 1931 more than 55,000 consumers were being served and rural primary lines had grown from a few short extensions connected to municipal distribution facilities, to more than 8,000 miles of line.

By the end of 1931, the great depression of the early thirties was slowing up rural construction, yet some progress was made each year, and by the end of 1935 ten thousand miles of rural primary line were in operation in Ontario.

In 1936 it was concluded that certain modifications in the fixed charges, associated with capital investment, could be made, which would permit a reduction in the monthly service charge to farmers only. In the following year the



reduction was extended to all rural consumers except summer cottages. The new service charge was \$1.00 per month, applicable to ordinary and small farms and also to hamlets. At the same time the maximum first consumption rate in rural districts was established as 6 cents per kilowatt-hour, and the second rate had a maximum of 2 cents per kilowatt-hour, applicable in all districts.

In 1938 the Commission was authorized by Order-in-Council to construct rural primary lines on a basis of two farms per mile, under the established lower service charges. This enlarged the number of farms that could be served by extensions from existing lines.

### Mileage Doubled in 5 Years

These special considerations, designed to encourage a more liberal use of electrical service in rural areas, especially by the farmers, together with the assistance previously provided in the Rural Power District Loans Act of 1930, were chiefly responsible for the amazing growth in rural extensions and in the use of power which took place from 1936 until a year after the war started. In these five years the mileage of primary lines practically doubled, reaching nearly 20,000 miles by the end of 1940. The aggregate power loads in rural power districts grew from about 47,000 horsepower in August, 1936, to 95,000 horsepower in August, 1941.

Today, the total number of rural consumers, some 135,000, exceeds the aggregate of domestic consumers in the cities of Brantford, Galt, Guelph, Hamilton, Kitchener, London, Peterborough, Port Arthur, St. Catharines and Windsor. Of these 135,000 rural customers, over 70,000 are farmers.

The mileage of rural primary lines is about three times the mileage of the main transmission lines of the Commission, including the long lines from eastern power sources to the Niagara system and the long lines in the mining districts of Northern Ontario. The capital invested in rural power lines and equipment in the rural power districts approaches \$40 million and the grant-in-aid paid by the Province aggregates almost \$20 million.

So successful was the programme of rural extension worked out by the Commission, backed by the Provincial Government and supported by the urban citizens of the Province, that it is estimated that 80 per cent of all rural citizens within economic transmission distance of a Hydro network are now being served or have Hydro within reach of their property.

### Blueprint for the Future

One of the post-war activities to which The Hydro-Electric Power Commission looks forward is the matter of completing the programme, now so well advanced, of bringing to all rural districts, except the most isolated ones, the benefits of Hydro service. Many plans to improve rural service after the war are being considered. Two may be mentioned.

After more than twenty years of experience in serving farmers, Hydro has found that on the average it takes three or four years after a farmer has lighting service for him to equip himself with the necessary appliances to make full use

of Hydro. The reason is partly because a full set of appliances means for the farmer a substantial investment. The Commission is now studying, with the manufacturers, ways and means of standardizing the more important appliances such as refrigerators, ranges, pumps and milking outfits. Standardized models designed to meet rural conditions, together with an increased market resulting from Hydro's post-war rural expansion programme, will, it is hoped, substantially reduce the cost of appliances.

Another progressive step which the Commission desires to take is to effect certain forms of amalgamation of various rural power districts, which will result in economies of operation and administration, and permit lowering the higher rates.

Speaking generally, Hydro rural rates are already very low. They are lower in fact than urban rates in many large areas outside Ontario, and for equal service compare favourably even with rates to urban consumers in the Province. For it must be remembered that service given to farm consumers is a combined power and lighting service, which is more comprehensive than that supplied to the ordinary city consumer. The farmer, without additional service charge, may use in his productive efforts electric motors of three or five horsepower, for the use of which the small city industrialist would have to pay a substantial monthly service charge under urban power rates.

The present rate schedules in rural districts result in nearly equal charges for equal monthly kilowatt-hour consumption, to all farmers who use Hydro extensively, because where the initial energy rates are higher the required energy consumption at the higher rates is less. It is the small farmer in a higher rate district, therefore, who is struggling frequently with less advantageous soil and other conditions, who will benefit most by amalgamation. Any revision of rate schedule made possible as a result of amalgamation will be planned to benefit chiefly consumers in higher rate districts and will be designed, if possible, to be of most benefit to consumers in the early years of their use of Hydro service. Resulting legislation enacted by the Province of Ontario will allow Hydro to work towards this end.



A snap of the switch and Hydro goes to work at milking time.

## WATER AND POWER

*(Continued from page 5)*

reservoirs may be used to reduce flood flows or to increase low flows or both, and are the most effective means of providing for periods of reduced flow. Their costs vary with topographical conditions, such as the presence of lakes, swamp areas, and suitable dam sites, but it may be stated that they usually constitute a major item of cost for most projects which contemplate the use of the full available flow of any stream.

The water resources of the counties under review, in addition to the great static water reservoir of lake Ontario, are found from west to east in the Trent, Moira, Salmon, Napanee, Cataraqui and Gananoque rivers. Due to the general topography of the area, with the height of land for a considerable portion, some twenty miles only from the Ontario shore and, at the westerly end, some seventy-five miles therefrom, large rivers cannot be expected. The Trent, with a drainage area of some 4,700 square miles, and the Moira, with 1,088 square miles, are much larger than any of the others which range from 345 to 265 square miles. With the exception of the two named, the uses of these streams are thereby limited, but they may still be important as assets to the communities through which their courses run.

While water supply for domestic or industrial purposes is amply provided for by lake Ontario as far as the communities along the water front are concerned, the flow available in these streams may be a welcome supply to the inland areas.

Turning now to the water power proper in the area under discussion, I shall risk repeating what perhaps most of you are acquainted with, in order to outline the general situation. Of the rivers within some sixty miles of Kingston, only one, viz. the Trent, has power sites of the order of size which may, for the present at least, be considered suitable for supplying this area.

On this river, there is installed approximately 85,000 h.p., including various mill sites and there are undeveloped sites with a total capacity of 25,000 h.p. This latter figure is made up of a number of sites of small capacities. Estimates of cost show them to be relatively expensive. This is to be expected, as naturally the most economical sites would be first developed.

Next in size to the Trent is the Moira, on which several small developments have been established to the extent of 2,700 h.p., leaving undeveloped some 1,400 h.p.

### Long Distance Transmission

Of the factors bearing on the development of these smaller sites, perhaps the major ones are the increase in rate of growth of the power demands in the larger systems, such as the Eastern Ontario system, and the relative economy in construction and operation of larger blocks of power from large-scale developments. This, of course, is an outgrowth of the development in the art of long distance transmission, making it possible to take power to areas where other factors are more favourable to its use, this in comparison to earlier conditions, where lack of transmission facilities necessitated the establishment of industries near the source of power.

This argument does not of course apply to certain electro-chemical and electro-metallurgical industries, where power is one of the most important items in cost of production. Such industries are under ordinary circumstances still located near the sources of power.

I do not wish these remarks to convey the impression that the development of small power sites is a thing of the past. Such, in my opinion, is definitely not the case; but I believe that they are likely to be postponed in favour of the larger sites. However, as these latter become exhausted or power from them has to be brought from greater distances, then the smaller sites will be utilized. There are of course special circumstances of isolated demands or of sites especially suited for some particular requirements which will render a small development advantageous.

In time, and perhaps sooner than may now be realized, all these sites, large and small, will be developed. There are available in Southern Ontario, say south of the French river, additional power supplies of the order of 2 to 2½ million horsepower. The present load in Southern Ontario is approximately 2,000,000 h.p. You will see, therefore, that the time when all our water power resources will be required is a measurable one. This, of course, does not mean this will mark the end of expansion in power supply for this part of the province. Considerable capacities are still available in the northerly part of the province, which may, by suitable facilities, be made available for the southern portion.

### Most Fortunately Situated

Reverting then to the situation in the area under review it will, I believe, be apparent that supplies of power to meet increases in demand of even moderate size will of necessity come from outside the area or at least from its borders. This district is most fortunately situated in having within reasonable transmission distance major power sources. The Madawaska, Ottawa and St. Lawrence river resources are all within 100 miles of Kingston, and in addition, there remain the undeveloped sites on the Trent river.

This area, then, and indeed all Eastern Ontario, is particularly well provided with regard to future power supplies.

As you know the Hydro-Electric Power Commission has stood and still stands ready to supply power to meet the demands of the municipalities, industries and other users. It is, at the present time, supplying power to thousands of rural customers in the hamlets and on the farms throughout the province. Many such customers are being supplied in the counties which are the subject of these discussions. Owing to the circumstances resulting from war, the taking on of additional rural customers has been discontinued on the instructions of the Power Controller, but the Commission is desirous that, when happier times return, it will be able to bring power to still greater numbers of rural areas, and to this end has under consideration plans which will facilitate such expansion. In my opinion, there is no use to which small blocks of power may be put which relieves more of drudgery and improves the living conditions of the users more than the use of such small blocks of power on farms. I believe that the general distribution of electric power to farmers of this province would be of very considerable benefit in making farm life more attractive.



## SARNIA'S NEW HOME

(Continued from page 7)

on North Front Street having been destroyed in a boiler explosion which occurred one night last fall.

Many fine tributes were paid to the members of the local commission staff for their loyal co-operation "during a difficult period of moving and transition."

After expressing his personal appreciation to the staff, Claude McMann announced the names of everyone present, while Mr. Durnford, who introduced Mr. Hay, the guest speaker, said the commission had been fortunate in securing such a splendid building which was in an ideal location. "I do not think we realize what is in store for us within a few years," he said. "We are happy to be able to exploit that site for the benefit of the people of Sarnia."

### Pays Tribute To Sarnia

At the outset of his remarks, Mr. Hay said that the people of Sarnia should be proud of their city, of themselves and their background. Sarnia, he recalled, had produced one of the greatest Prime Ministers Canada had ever had in the person of Alexander Mackenzie, while it had also been prominent in shipping circles. Early settlers, continued Mr. Hay, were largely from Wellington's army. Sarnia citizens, he said, were playing their part in industry, commerce, on the sports' field and in the war effort.

At the outbreak of the war, the speaker stated, many people had wanted to do something heroic and be in the limelight, "But," he pointed out, "everyone cannot be a hero and do spectacular things and so I would like to leave you this motto: 'Do the little things you can do something about.' There are little things you and I can do to help promote the war effort that do not give us any band-playing. Let us not grouse about the things we are up against in the way of restrictions. They are mild compared with what our friends and relatives are experiencing overseas."

In closing, Mr. Hay extended, in behalf of the citizens of London, best wishes for the future of Sarnia.

### Taking A Forward Step

Mayor W. Carlisle Hipple, who welcomed the visitors present, remarked, "I believe in what Hydro is doing. We are taking a forward step towards a greater Sarnia. We have the interests of the people at heart."

Commissioner and former mayor John T. Barnes, commissioner E. J. Blake, T. C. Benson of Benson and Willcocks, and James Wilson of the H.E.P.C., were among other speakers who delivered brief addresses.

In conversation with Mr. Galloway, chairman of the commission, and Mr. McMann, the manager, *Hydro News* learned some interesting facts concerning Sarnia. For example, when Hydro was introduced in that city in December, 1916, they had a staff of four and the total assets were approximately \$270,000. Today, there are 28 on the staff and the assets exceed \$1,700,000.

In 1916, before Hydro service was introduced in Sarnia, the domestic rate was 6 cents per kilowatt-hour and the commercial rate 5.4 cents. The average rates charged by the new Hydro system in 1916 were: domestic, 6.6 cents; commercial, 4.4 cents. In 1942 the average rates charged were: domestic, 1.45 cents; commercial, 1.34 cents.

Records show that in October, 1917, the load was 1,126 horsepower, and today it exceeds 10,500 horsepower. In 1917, there were 2,647 Hydro customers; today, there are 5,650.

The first debenture, for \$120,000, issued on January 1,

## TOSS OF COIN DECIDES GAME



The fact that the trophy was fashioned out of an old air heater, dug out of the scrap pile, may have accounted for the hot challenge golf game played over St. Andrew's course recently. The principals in the game, shown above, are, from left to right, Ben Thackery, secretary, and Clem Proctor, engineer, of North York Hydro, and Roy Harmer and Ken Brown of the H.E.P.C. With the score tied, a flip of the coin gave the "trophy" to North York. Bearing the imposing inscription "Honor et gloria pro victoria", and finished in aluminum paint, the "Hydro Cup" was "donated" by the H.E.P.C. representatives. The score incidentally was as closely guarded as a military secret!

## MARY PICKFORD BUNGALOW



East York Township Hydro-Electric Commission, according to Albert G. Jennings, chairman, has had a share in the construction of the Mary Pickford Bungalow (shown above) which is located at 90 Glenwood Crescent at O'Connor Drive. Mr. Jennings has taken an active part in boosting the sale of shares in the project which is being sponsored by the Lions International District "A" and the Gerrard Business Men's Association of Toronto. The draw will be made in the near future by Mary Pickford, who contributed \$5,000 to start the bungalow, and the proceeds will go to British War Victim Funds.

1916, to purchase the old plant and rebuild the distribution system, was retired in 1935, while a second debenture issue for \$128,000 was retired in 1938. Only the sum of \$6,000 remains to be paid off before the commission is free of debt and this will be done next year.

### See New Era of Expansion

It was on January 4, 1836, when the city got its name. A group of early settlers, according to historical records, held a meeting and "after a heated and indeed an acrimonious discussion decided upon the name of Sarnia." Today, the population is approximately 25,000 and there are 86 industrial consumers of electricity, while new and important industries will soon be in operation.

Members of the Sarnia Hydro-Electric Commission all foresee a new era of important industrial expansion, with Hydro setting the pace, as the city marches forward to the fulfilment of its economic destiny.

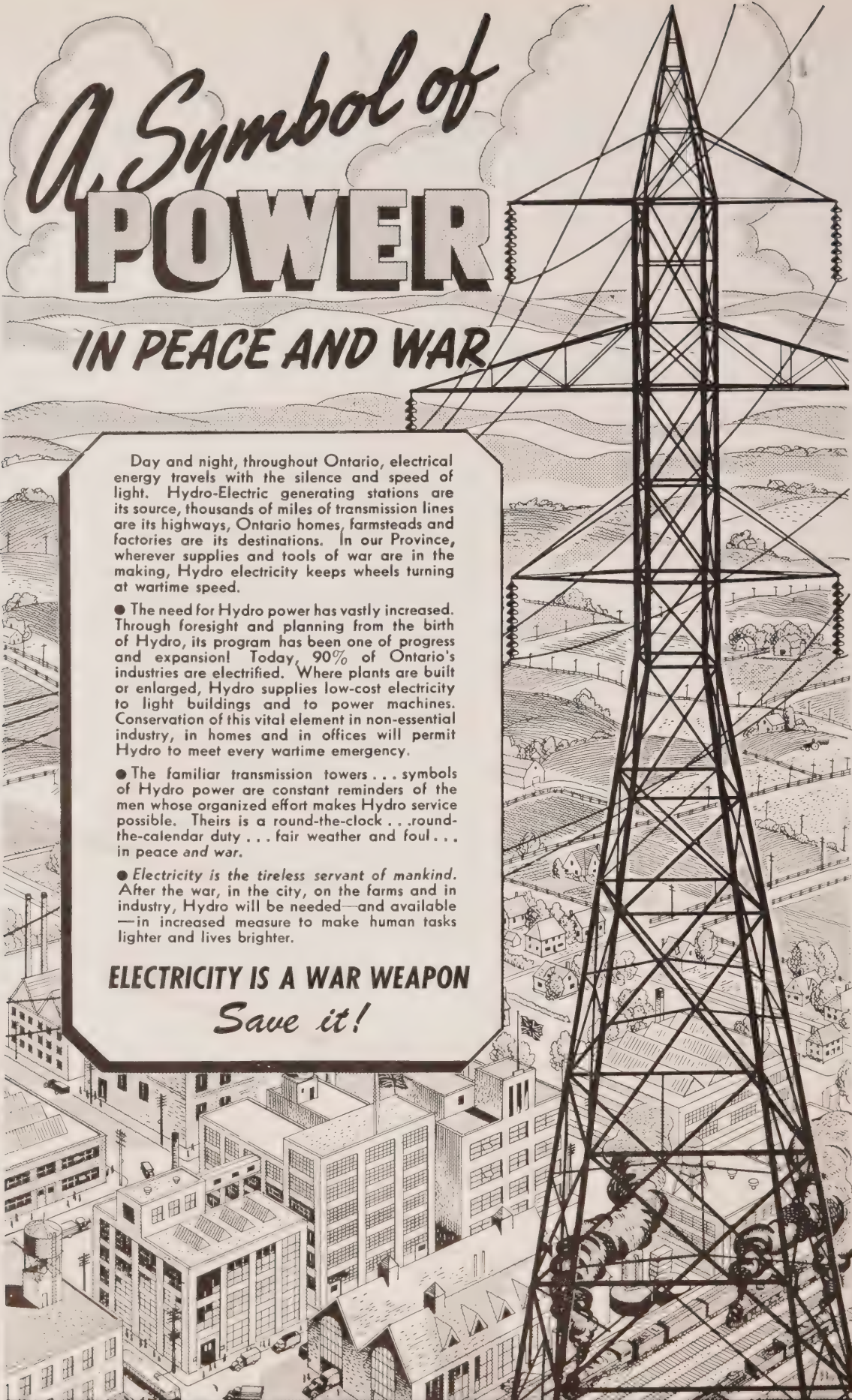
# MUNICIPAL LOADS, APRIL, 1943

NIAGARA SYSTEM (25-Cycle)			Popula- tion		Popula- tion	
	H.P.	Popula- tion	H.P.	Popula- tion	H.P.	Popula- tion
Acton	1,504	1,903	8	21	Palmerston	540 1,400
Agincourt	189	P.V.	Essex	548 1,886	Paris	1,800 4,604
Ailsa Craig	107	487	Etobicoke Twp.	6,710 V.A.	Parkhill	163 1,029
Alvinston	91	649	Exeter	589 1,654	Petrolia	953 2,768
Amherstburg	720	2,704	Fergus	1,233 2,759	Plattsville	122 P.V.
Ancaster Twp.	324	V.A.	Fonthill	160 860	Point Edward	1,579 1,199
Arkona	55	403	Forest	465 1,562	Port Colborne	2,139 6,928
Aurora	1,237	2,821	Forest Hill	6,526 12,172	Port Credit	767 1,934
Aylmer	943	1,985	Galt	11,293 15,126	Port Dalhousie	903 1,599
Ayr	134	760	Georgetown	1,576 2,452	Port Dover	355 1,790
Baden	468	P.V.	Glencoe	180 763	Port Rowan	88 700
Beachville	795	P.V.	Goderich	1,399 4,674	Port Stanley	290 824
Beamsville	398	1,227	Granton	70 P.V.	Preston	4,185 6,656
Belle River	174	836	Grimsby	773 1,988	Princeton	117 P.V.
Blenheim	487	1,873	Guelph	11,190 23,074	Queenston	101 P.V.
Blyth	95	662	Hagersville	600 1,524	Richmond Hill	410 1,295
Bolton	196	629	Harriston	403 1,292	Ridgetown	518 1,986
Bothwell	106	683	Harrow	468 1,092	Riverside	1,010 5,235
Brampton	2,572	5,975	Hensall	185 686	Rockwood	91 P.V.
Brantford	20,956	31,622	Hespler	2,693 2,938	Rodney	136 758
Brantford Twp.	792	V.A.	Highgate	89 322	St. Clair Beach	69 138
Bridgeport	113	P.V.	Humberstone	528 2,831	St. George	140 P.V.
Brigden	77	P.V.	Ingersoll	3,181 5,757	St. Jacobs	294 P.V.
Brussels	114	784	Jarvis	189 513	St. Marys	1,336 4,009
Burford	183	P.V.	Kingsville	490 2,453	St. Thomas	7,693 17,045
Burgessville	41	P.V.	Kitchener	25,781 35,456	Sarnia	10,454 18,599
Burlington	1,429	3,925	Lambeth	107 P.V.	Scarborough Twp.	3,956 V.A.
Burlington Beach	379	1,474	LaSalle	213 907	Seaforth	581 1,782
Caledonia	306	1,430	Leamington	1,304 6,048	Simcoe	2,284 6,340
Campbellville	43	P.V.	Listowel	1,285 2,984	Smithville	162 P.V.
Cayuga	105	700	London	37,801 77,105	Springfield	60 382
Chatham	6,352	17,184	London Twp.	517 V.A.	Stamford Twp.	2,409 8,275
Chippawa	297	1,228	Long Branch	1,143 4,258	Stoney Creek	220 933
Clifford	99	491	Lucan	168 643	Stratford	6,583 17,163
Clinton	567	1,879	Lynden	100 P.V.	Stouffville	234 1,198
Comber	118	P.V.	Markham	294 1,175	Strathroy	1,318 2,834
Cottam	69	P.V.	Merlin	83 P.V.	Streetsville	170 701
Courtright	42	355	Merriton	10,914 2,916	Sutton	153 949
Dashwood	92	P.V.	Milton	1,319 1,915	Swansea	2,899 6,907
Delaware	62	P.V.	Milverton	372 994	Tavistock	608 1,080
Delhi	528	2,430	Mimico	2,396 7,987	Tecumseh	293 2,331
Dorchester	78	P.V.	Mitchell	675 1,670	Thamesford	189 P.V.
Drayton	108	528	Moorefield	51 P.V.	Thamesville	159 816
Dresden	397	1,525	Mount Brydges	87 P.V.	Thedford	88 598
Drumbo	100	P.V.	Newbury	28 288	Thorndale	66 P.V.
Dublin	34	P.V.	New Hamburg	536 1,441	Thorold	2,247 5,284
Dundas	2,891	5,245	Newmarket	1,507 3,800	Tilbury	1,378 1,923
Dunnville	1,171	3,916	New Toronto	11,114 9,469	Tillsonburg	1,299 4,602
Dutton	239	830	Niagara Falls	9,540 20,371	Toronto	335,619 657,612
East York Twp.	7,349	41,578	Niagara-on-the-Lake	694 1,764	Toronto Twp.	2,527 V.A.
Elmira	1,163	2,069	North York Twp.	9,637 V.A.	Wallaceburg	3,344 4,802
Elora	397	1,185	Norwich	382 1,301	Wardsville	31 221
Embro	122	420	Oil Springs	212 541	Waterdown	198 867
Erieau	67	281	Otterville	75 P.V.	Waterford	430 1,294
					Waterloo	5,391 8,968



# MUNICIPAL LOADS, APRIL, 1943

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Watford	345	1,023	Neusadt	47	431	Lakefield	324	1,301
Welland	11,886	14,899	Orangeville	659	2,558	Lanark	68	686
Wellesley	96	P.V.	Owen Sound	5,147	13,559	Lancaster	38	570
West Lorne	200	768	Paisley	89	730	Lindsay	3,723	8,345
Weston	4,717	6,165	Penetanguishene	891	4,177	Madoc	173	1,130
Wheatley	192	761	Port Carling	110	520	Marmora	114	1,004
Windsor	48,188	104,415	Port Elgin	354	1,415	Martintown	28	P.V.
Woodbridge	577	946	Port McNicoll	74	950	Maxville	90	811
Woodstock	8,121	12,339	Port Perry	225	1,175	Millbrook	81	749
Wyoming	67	538	Priceville	10	P.V.	Morrisburg	315	1,484
York Twp.	18,663	77,175	Ripley	89	420	Napanee	1,254	3,241
Zurich	118	P.V.	Rosseau	26	305	Newcastle	155	701
(25 and 66-2/3 Cycle)			Shelburne	264	1,053	Norwood	112	710
Hamilton	155,788	164,719	Southampton	491	1,467	Omemee	166	630
St. Catharines	29,195	32,559	Stayner	232	1,106	Orono	80	P.V.
Trafalgar Twp.	448	V.A.	Sunderland	62	P.V.	Oshawa	16,297	26,610
(66-2/3 Cycle)			Tara	74	510	Ottawa	33,998	150,861
Bronte	134	P.V.	Teeswater	94	873	Perth	1,659	4,197
Oakville	989	3,369	Thornton	23	P.V.	Peterborough	11,326	24,977
GEORGIAN BAY SYSTEM			Tottenham	81	532	Pictou	1,057	3,400
(60-Cycle)			Uxbridge	267	1,480	Port Hope	2,388	4,997
Alliston	354	1,700	Victoria Harbour	61	979	Prescott	1,341	3,283
Arthur	131	1,089	Walkerton	860	2,534	Richmond	50	428
Bala	103	355	Waubushene	63	P.V.	Russell	53	P.V.
Barrie	3,920	9,559	Warton	211	1,750	Smiths Falls	2,630	7,741
Beaverton	173	941	Windermere	25	117	Stirling	259	947
Beeton	113	617	Wingham	649	2,149	Trenton	4,560	8,183
Bradford	194	1,041	Woodville	52	439	Tweed	202	1,181
Brechin	41	P.V.	EASTERN ONTARIO SYSTEM			Warkworth	60	P.V.
Cannington	162	761	(60-Cycle)			Wellington	154	948
Chatsworth	52	333	Alexandria	177	1,976	Westport	74	725
Chesley	440	1,812	Apple Hill	39	P.V.	Whitby	1,331	4,236
Coldwater	101	545	Arnprior	1,120	4,019	Williamsburg	83	P.V.
Collingwood	2,430	6,249	Athens	81	626	Winchester	290	1,017
Cookstown	69	P.V.	Bath	29	325	THUNDER BAY SYSTEM		
Creemore	111	661	Belleville	6,864	15,498	(60-Cycle)		
Dundalk	222	686	Bloomfield	81	636	Fort William	13,230	30,370
Durham	334	1,874	Bowmanville	2,524	3,850	Nipigon Twp.	202	V.A.
Elmvale	166	P.V.	Brighton	366	1,462	Port Arthur	19,090	24,217
Elmwood	53	P.V.	Brockville	4,399	10,576	NORTHERN ONTARIO		
Flesherton	36	452	Cardinal	221	1,602	PROPERTIES		
Grand Valley	126	645	Carleton Place	1,632	4,143	Nipissing District		
Gravenhurst	953	2,261	Chesterville	238	1,094	(60-Cycle)		
Hanover	1,180	3,190	Cobden	71	643	North Bay	4,319	16,013
Holstein	12	P.V.	Cobourg	2,145	5,907	Patricia District		
Huntsville	1,007	2,943	Colborne	198	960	(60-Cycle)		
Kincardine	636	2,483	Deseronto	173	1,002	Sioux Lookout	300	1,967
Kirkfield	23	P.V.	Finch	67	396	Sudbury District		
Lucknow	313	856	Frankford	122	1,095	(60-Cycle)		
Markdale	153	776	Hastings	90	823	Capreol	201	1,660
Meaford	640	2,759	Havelock	107	1,103	Sudbury	8,733	32,731
Midland	3,920	6,764	Iroquois	183	1,123			
Midway	106	764	Kemptville	326	1,230			
Mount Forest	419	1,936	Kingston	12,197	29,545			



# *A Symbol of* **POWER**

## ***IN PEACE AND WAR***

Day and night, throughout Ontario, electrical energy travels with the silence and speed of light. Hydro-Electric generating stations are its source, thousands of miles of transmission lines are its highways, Ontario homes, farmsteads and factories are its destinations. In our Province, wherever supplies and tools of war are in the making, Hydro electricity keeps wheels turning at wartime speed.

● The need for Hydro power has vastly increased. Through foresight and planning from the birth of Hydro, its program has been one of progress and expansion! Today, 90% of Ontario's industries are electrified. Where plants are built or enlarged, Hydro supplies low-cost electricity to light buildings and to power machines. Conservation of this vital element in non-essential industry, in homes and in offices will permit Hydro to meet every wartime emergency.

● The familiar transmission towers . . . symbols of Hydro power are constant reminders of the men whose organized effort makes Hydro service possible. Theirs is a round-the-clock . . . round-the-calendar duty . . . fair weather and foul . . . in peace and war.

● *Electricity is the tireless servant of mankind.* After the war, in the city, on the farms and in industry, Hydro will be needed—and available—in increased measure to make human tasks lighter and lives brighter.

**ELECTRICITY IS A WAR WEAPON**

*Save it!*





HYDRO

# News

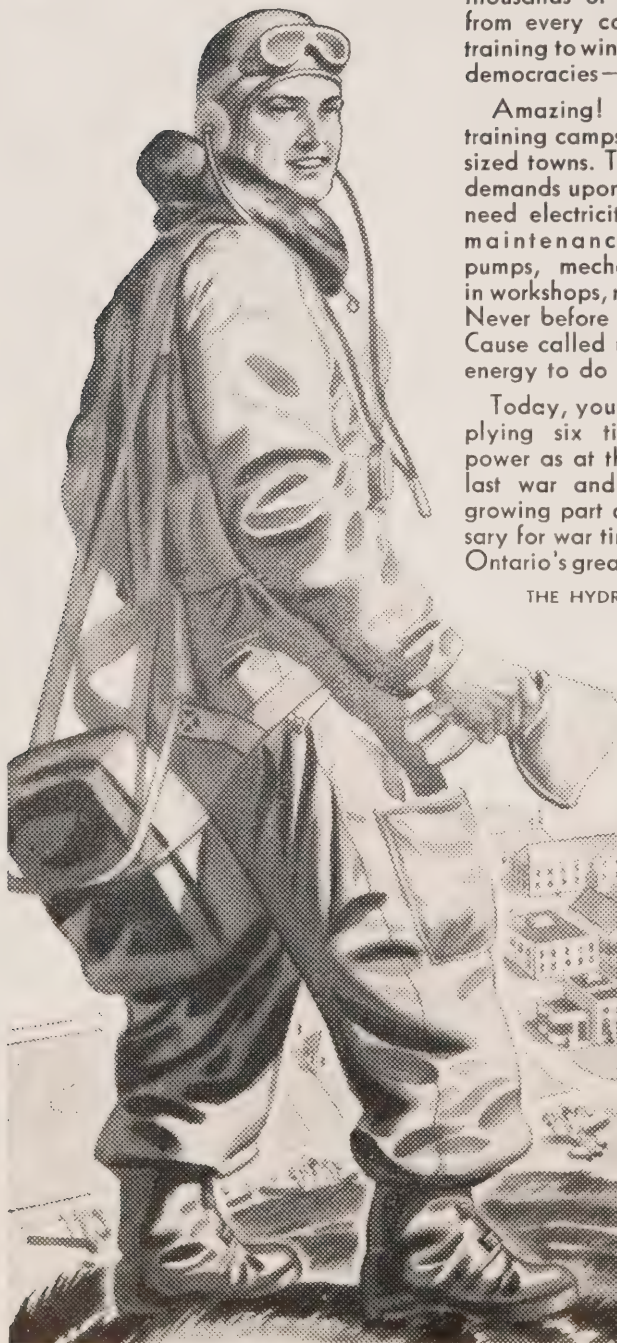
SEP 2 1943

UNIVERSITY OF TORONTO

NEXT MAGAZINE



# Victory IS IN THE MAKING AND **HYDRO** SPEEDS THE WORK!



● Right here in Ontario, thousands of young patriots from every continent are in training to win Victory for the democracies—from the Air!

Amazing! Some of our training camps are like good sized towns. They make new demands upon Hydro. They need electricity for lighting, maintenance, airfields, pumps, mechanisms, radio; in workshops, rooms, kitchens. Never before has so great a Cause called upon electrical energy to do so much.

Today, your Hydro is supplying six times as much power as at the close of the last war and a large and growing part of this is necessary for war time production. Ontario's great aircraft indus-

tries are powered by Hydro, also factories and foundries making all manner of military equipment. This war is not only mechanized but electrified!

You are, of course, proud that your Hydro System is playing so great a part in the victory program. Of course, you will economize in your use of electric energy for all peace-time pursuits—and forego for a while further extensions of electric service. With all of us, war needs must come first!

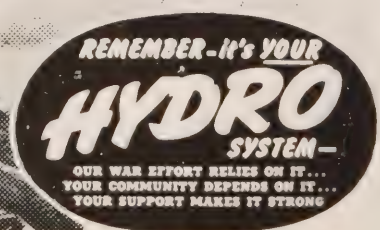
#### Electrical Thrift Hints

Always use the heating element best suited to the work in hand. That saves current, prevents boil-overs. Use automatic controls as directed. Don't leave elements on 'high' a moment longer than necessary. Have your dealer or local 'Hydro' put your appliances in good order.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

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# HYDRO News

*formerly The* BULLETIN

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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## The Front Cover



This month's front cover "Next Madam" points to the part being played by Hydro on the farm front. Madam is a pure bred jersey cow being trimmed with electric clippers by a farm hand, not only to keep her cool and contented, but also for cleanliness. With the lack of experienced milkers on Ontario farms, many farmers without the aid of Hydro would be unable to carry on dairy farming.

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August 1943

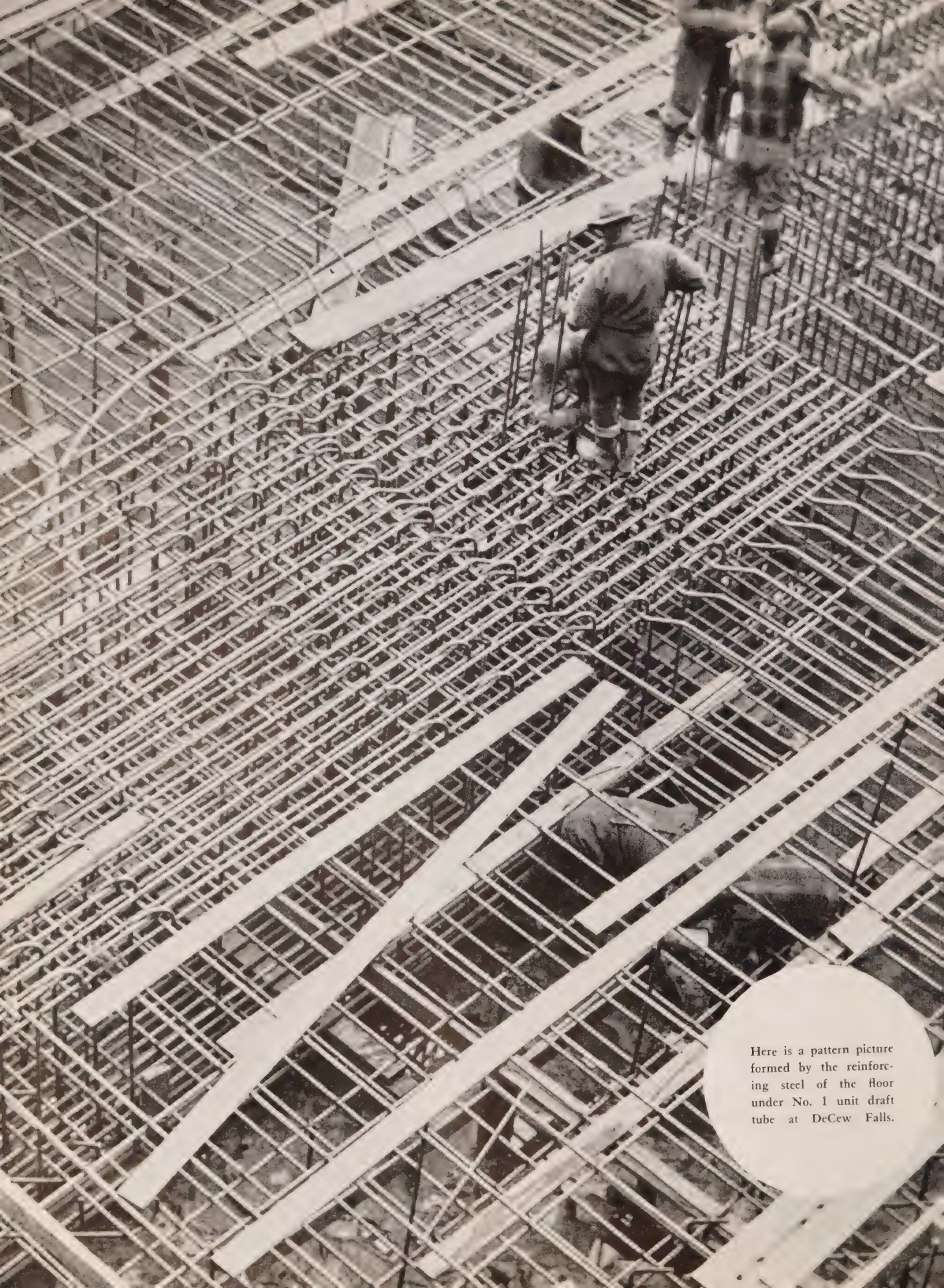
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Here is a pattern picture formed by the reinforcing steel of the floor under No. 1 unit draft tube at DeCew Falls.



## \* *Page Three* \*

### HIGH WATER

**R**ISING and falling levels in the Great Lakes, as recorded by Government operated automatic gauges on each of the lakes, follows a cycle over varying periods of years.

This year, particularly on Lake Ontario, is one of the peak years, although the level is not as high as has been recorded on two previous occasions. From past experience, we may expect that, next year, the level will be somewhat lower and will continue to recede, with variations, until it again reaches a low level.

The addition of an average flow of 4,000 cubic feet per second into the Great Lakes system from the Ogoki will in time raise the mean stage levels of the four lower lakes an estimated two and a quarter inches. While this is a fact, it must be kept in mind that the total diversion through the Chicago drainage canal approximates 5,000 cubic feet per second, so that the Ogoki and Long Lake diversions approximately balance withdrawals at Chicago and tend to restore natural conditions.

Furthermore, in tending to restore the lakes to their natural regimens, navigation on these great inland seas will be benefited to the extent of many thousands of dollars.

### ROLE OF RESEARCH

**T**HIS war has served to accentuate the vital character of the work which is being done in the field of research. While little is known—and less can be said—at present about many of the problems which are being studied behind the closed doors of research laboratories, important advancements are coming to light every day.

In this field, technicians of The Hydro-Electric Power Commission of Ontario have been devoting their time and talents to the solution of problems and the discovery of new techniques which will contribute to the progress of Hydro in this province.

One phase of the research work which is being carried on in the H.E.P.C. laboratory is discussed in the article entitled "Concerning Concrete" in this issue of Hydro News.

The fine reputation which the Commission has established in construction circles throughout this continent for the high quality of concrete used on all Hydro projects has not been achieved by guesswork or accident. The article and illustrations serve to indicate the detailed studies and analysis which are made of all materials used in making concrete for each project.

Another factor which has contributed to Hydro's reputation in this field over a period of years has been the close teamwork among the Commission's laboratory, construction and inspection staffs. The quality of the concrete is not only determined in advance by laboratory technicians but specifications and instructions are rigidly followed by construction men in the field. The inspection job is in no sense a "policing" procedure but rather a co-operative effort to make possible the attainment of the highest possible standard of workmanship in all the Commission's construction projects. But the task does not terminate with the completion of a job for all projects are periodically inspected in order that the H.E.P.C. technicians may secure additional data that will be studied and applied in evolving new techniques which will assure a continuity of this progressive policy.


### FARMING WITH HYDRO

**T**ODAY agriculture is a vital war industry and, despite poor weather and lack of help, Ontario farmers have marshalled all their resources to provide the foodstuffs necessary, both on the home front and overseas.

In this task Hydro has been able to assist many farmers situated near power distribution lines, and has been able to aid the farmer in overcoming the problem of operating his farm with little or inexperienced help.

Hydro News was privileged to visit some of these farms and, in our story "Combined Operations," we have attempted to picture some of the many chores being performed by Hydro.

Not only is Hydro helping produce tanks and planes, but is also helping to produce food for the men behind the guns.



# CONCERNING CONCRETE

Here is a massive wall of solid reinforced concrete. It is the Barrett Chute main dam which towers to a height of 97 feet above the old river bed and backs up the water through a canal to the headworks.

These are the sluiceways at Barrett Chute main dam.

**By H. C. Ross**

**H.E.P.C. LABORATORY**

**F**OR more than thirty years The Hydro-Electric Power Commission of Ontario has made a systematic and organized study of concrete both in the laboratory and in the field. Out of these studies have emerged methods of test and control as well as a detailed system of inspection whose thoroughness is reflected in the general high quality of concrete to be found throughout our structures.

The quality control of concrete as practised by the Commission might be considered under the following headings: 1. Search for suitable aggregates; 2. Laboratory tests and proportioning studies; 3. Inspection and control of concrete during construction; 4. Periodic examination of existing structures; 5. Research.

## **Search for Suitable Aggregates**

In most instances the Commission's power projects are located in districts that are far removed from commercial aggregate deposits. It is therefore often necessary to send out a party well in advance of actual construction to search for suitable materials adjacent to the power site. This party, working under the direction of an inspector from the laboratory, sinks test pits and proves out areas that show promise of yielding sufficient sand or gravel of the required quality. Standard tests for grading and purity are made in the field as the work progresses. If deficiencies in grading are found in the main aggregate deposit, a search

is made for supplementary deposits that will yield a blending sand capable of correcting these deficiencies.

## **Tests and Studies**

Following the preliminary survey for aggregates, samples of material proposed for the work are forwarded to the main laboratory for further quality tests and for proportioning studies. This phase of the work (of which the photographs taken last week are representative) is a necessary step towards obtaining concrete of high quality but as the methods of test are now standardized its importance is secondary to that of the detailed inspection of concrete during construction. Proportioning methods were developed as a result of extensive laboratory investigations carried out the time of the Queenston Development. Since that time these methods have been improved and simplified to the point where a standard procedure is followed and testing is largely routine.

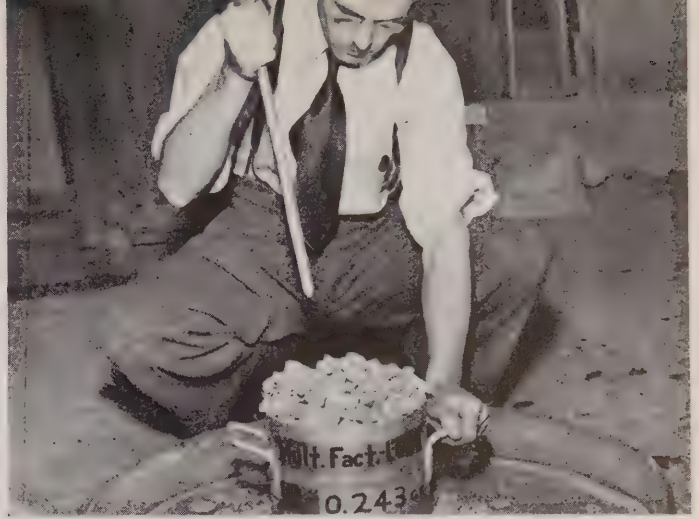
At the main laboratory a mechanical analysis is made of the sand and stone to determine if the grading of the material conforms to recognized standards. Tests are also made to determine specific gravity, absorption, unit weight, silt content, organic matter and structural strength. Where the power site foundation material is to be used as coarse aggregate, samples of the rock are crushed at the laboratory before quality tests are proceeded with. If compression tests are required on the stone, specimens are cut to size

*(Continued on page 21)*





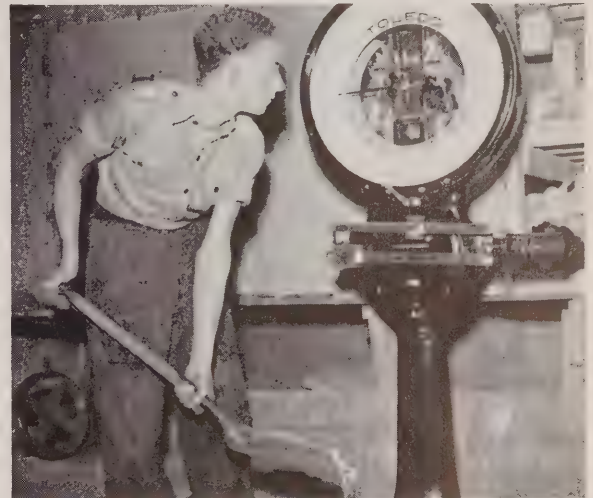
All materials used in making the concrete for Hydro construction projects are carefully tested at the main H.E.P.C. laboratory. Here, the stone, which is to be tested, is first broken in a small jaw crusher.



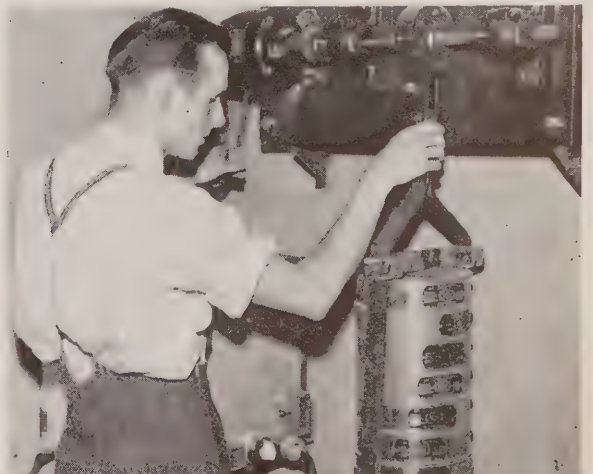
Wielding a dagger-like implement, this technician is rodding the stone to determine the unit weight of the aggregate. Three separate and equal layers are placed in the container and each layer is rodded or "stabbed" 25 times.



This is known as a sieving machine which is used in making a sieve analysis of the stone. When switched on the machine vibrates and the fine pieces of stone pass through the screen into the lower receptacle.



All materials are also carefully weighed before any concrete is made. This laboratory technician is checking the scales to ascertain if he has the required quantity of crushed stone.



Here is another type of sieving machine which vibrates when it is in operation. The operator in this case is sieving sand to determine the amounts of the different sizes it contains.





Water, of course, is used in making a batch of concrete. The quantities of each material must be weighed in order that the proportions will be right. This illustration shows the water being weighed.



All materials having been weighed and analyzed, the Hydro technicians go to work and mix up a test batch of concrete. This machine, which is similar in principle to an electric mixer used in a modern kitchen, is used to mix the concrete.



Here is another consistency test. At each turn of the wheel shown above, the flow table drops with a bump causing the concrete to spread. The extent of the spread is determined at the point of contact with the graduated circular scale on the table.



Next the moulds are filled with concrete in three equal layers, each separate layer being again rodded 25 times in accordance with standard practice. The moulds having been filled and rodded the concrete is allowed to harden.



The concrete having been mixed, three separate and equal layers are placed into the cone shown above. Each layer is rodded 25 times and the cone is then removed. A technician then measures the "slump" to determine the concrete's consistency.





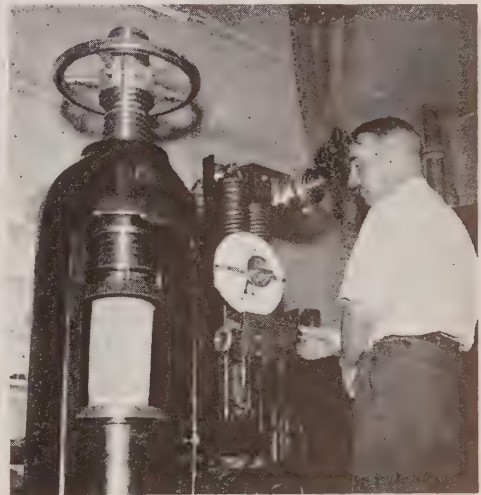
This is no place to find a cure for rheumatics. The atmosphere here is really damp. Concrete cylinders are cured in this moist room at a predetermined temperature and humidity for a specified period.



This is a high frequency vibrator which is used to consolidate stiff mixtures of concrete. In appearance this machine bears some resemblance to the electric drills used on construction jobs.



This Hydro laboratory technician is shown removing a cylinder of concrete from a mould after it has hardened.



This hydraulic machine is capable of exerting a pressure of 400,000 lbs. A specimen of concrete is placed in this machine to ascertain the pressure it is capable of standing. The cameraman "shot" just as the slab was commencing to crack.

If auto suggestion can keep people cool during these torrid days this picture should do the trick. This is the "refrigerator" in which concrete is tested. Inside the temperature can be lowered to 40 below although it is usually kept at a mere 20 below.







The technician here is making a briquette of mortar, the proportions being one of cement and three of sand. After being allowed to harden these briquettes are placed in water and allowed to cure from 3 to 28 days.



Tension of the cement briquette is determined by this test. The briquette is shown in the jaws on the right. As the lead shot drops from the container (top left) into the lower container, the weight (top right) bears down and tension increases until the briquette breaks.



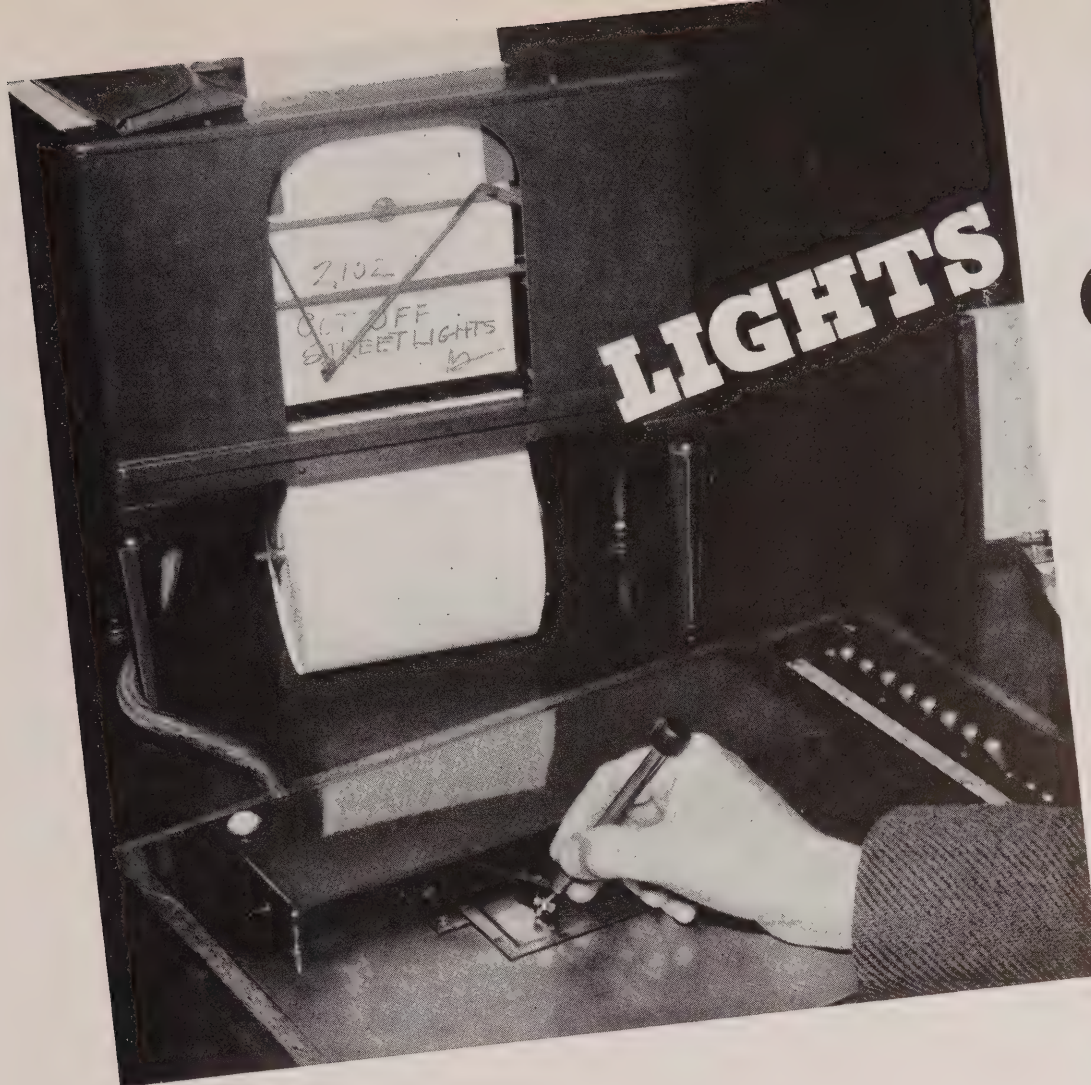
This picture shows part of the research work which is being carried on at the Hydro laboratory. The technician is investigating an absorptive form liner which is designed to absorb air and water from the surface of fresh concrete.



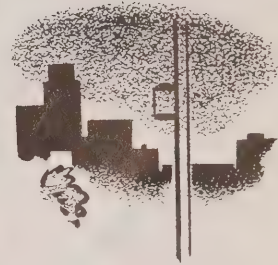
Length changes of as little as ten-thousandth of an inch are measured by this test. The specimen is placed between metal gauge points and its length carefully determined. The reading on the dial indicates any change that has taken place.



the electrically-controlled telautograph which connects the various sub-stations with the head office of the Toronto Hydro-Electric System.



# LIGHTS OUT!



## By Clare Neal

**A** HAND reaches for a pencil of steel, writes on a steel plate and, within a matter of seconds, fifty thousand lights which had dotted Toronto's 575 miles of streets, melt into the darkness of night.

The hand is that of the load supervisor in the office of the Toronto Hydro-Electric System at 14 Carlton Street. The steel pencil and plate are key parts of the electrically-controlled telautograph over which messages are written simultaneously to the operators in one or all of the five main sub-stations. Operators are on duty in these stations 24 hours a day and manipulate the switches which control Toronto's street lighting system. Robot or unmanned stations are operated by remote control from the manned stations.

But this is only part of the story of Hydro's key role when a blackout test is called in Toronto.

### Zero Hour

As the blackout "zero hour" draws near, a gong clangs four times in the load supervisor's office. At the same time, this warning, which comes over the fire alarm system, is recorded in the form of perforations on a tape so that the operator can double check the signal.

A minute or two later another signal is heard in the hydro load supervisor's office. This time it is three clangs of the gong, meaning "lights out." As this signal comes over, sirens located in various sections of the city commence to wail. The supervisor immediately writes the message "Street lighting off" on the telautograph and the waiting operators in the Hydro sub-stations at once pull the switches, plunging the city streets into darkness.

Two clangs of the gong proclaim the "all clear" which is transmitted by telautograph and, once again, the lights are switched on.

These interesting facts on Hydro operations during a blackout were outlined by C. E. Schwenger, distribution engineer of the Toronto Hydro-Electric System, when interviewed by Hydro News recently. A graduate of the University of Toronto, he was at one time identified with the testing laboratory of the Westinghouse Company in Hamilton. He returned to Toronto and served for a time with the city engineer's department before becoming associated with the Toronto Hydro.

Mr. Schwenger explained that high voltage feeders supplying power for street lighting, domestic and industrial service are all controlled in the load supervisor's office.

### Maps Worth \$300,000

At this point, Mr. Schwenger directed the attention of Hydro News to a series of 125 cloth-bound key maps or charts which show, at a glance, the location of every street

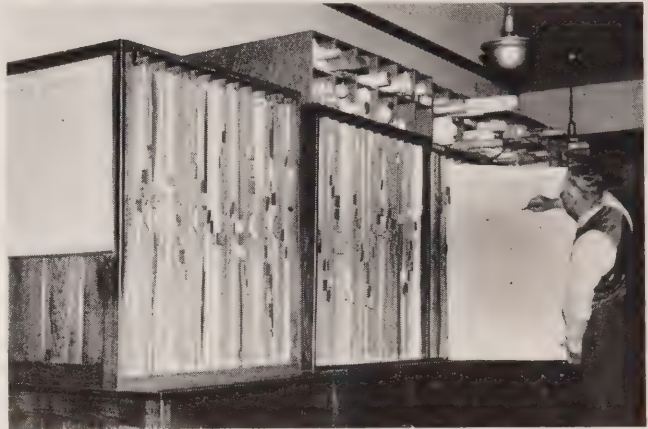
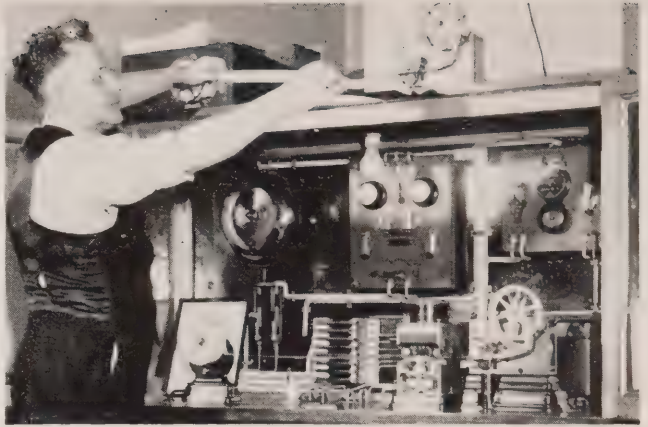


light, pole, transformer, switch, and sub-station, in Toronto. On the back of these maps is the block plan of the district covered by the map.

In other words, these maps represent a complete plan of Toronto's electrical layout. Compiled over a period of 30 years, they are valued at something like \$300,000. In the interests of safety, a duplicate set is kept in the vaults. In addition, there are massive volumes containing complete data on the underground conduits installed by all utility services.

So far as street lighting is concerned, Mr. Schwenger said that there was no guesswork as to the times when these lights are turned on and off. This is determined by the rising and setting of the sun, a complete list of these times being prepared a year in advance by the observatory for the use of the Toronto Hydro.

All instructions in connection with Hydro service in Toronto, Hydro News learned, are given in writing over the electrically-controlled telautograph. In issuing these instructions, the load supervisors have before them enormous charts on which are reproduced all power lines, switches, and sub-stations in Toronto. As the operator gives an order for a switch to be opened or closed he performs



Upper right—Thomas Carnochan, distribution trouble despatcher, examines the teletape after the yellow signal for a blackout has been rung in on the alarm system.

Centre—These maps, valued at \$300,000, show the entire electrical layout in the City of Toronto.

The lower photograph shows the Toronto Hydro-Electric System load supervisors seated before the large charts on which are reproduced all power lines, switches and sub-stations in the city.



In the inset is C. E. Schwenger, d'stribution engineer



the corresponding action on the board so that he, or the man who follows him, can tell at a glance what is happening over the entire system.

There are only two small sections of Toronto's street lighting system which are not controlled from the sub-stations. One of these is the Toronto Islands and the other is a very small part of the industrial area south of the lift bridge on Cherry Street.

### Electric Eye Operator

Both of these are automatically controlled. On the Island as darkness attains a certain density a relay is operated by an electric eye and that in turn closes a switch and the lights go on. When daylight returns a similar process takes place and the lights are extinguished. The Cherry Street section is controlled by a time clock.

During blackout however, these sections must be operated by hand and a man must be sent to open the switches and cut off the lights.

Trouble in the street lighting circuit is detected by the public at large and reports flow into the head office. Immediately, men are dispatched to locate and remedy the trouble. Damaged light bulbs and fixtures are detected by the constant patrol maintained over the entire system by eight men in patrol trucks. These men travel all night over the city streets and replace burned out or damaged bulbs from supplies carried in the trucks. They cover the entire system twice weekly.

Trouble on transmission lines, however, is discovered by the sub-station operators, and word is flashed to the load supervisors. They immediately dispatch trouble crews. Meanwhile they give instructions as to how to cut out the affected lines and, if possible, substitute other sources of supply to restore service while repairs are being made. This usually has taken place before the average householder has reached his telephone to report that his power has failed.

### Present System Born

While the streets in the City of Toronto were lighted much earlier, the birth of the present type of street lighting actually took place in 1910. There have been improvements, certainly, but basically there has been little change to the present day.

Prior to that time, the street lighting was provided by arc lamps. They were widely scattered and hung far above the roadway. The reason for stringing them high up was the fact that they were so bright that they would dazzle the eyes.

At that time, the Toronto and Niagara Power Company held the contract for street lighting. When it expired in 1911, it was not renewed, and the lighting system was taken over by the city's electrical department.

The first street lighted by the new department was Charles Street East. Poles, wires, and fixtures were installed exactly as they were to be when completed, and, in November 1910, powered with storage batteries, the lights were turned on and viewed by the city fathers of that time.

So successful was the test that within a short time the authority was given to permanently install the lights, and a race, to complete the lighting of streets before the

(Continued on page 27)



Dear Mr. Editor:

Under the stimulus of patriotic fervour, aided by clever sales propaganda, many of us have devoted our spare time to digging and planting a "Victory Garden". Our enthusiasm ran high and our hopes higher. Even before nature could possibly produce any results, mentally our garden had blossomed forth and a bountiful harvest was ready to be gathered in. And then there were the horticultural displays at which our contributions were so outstanding that everyone consulted us as to how it was done.

But alas and alack, they were only happy dreams.

Now in our humility we approach the horticultural society with a humble request. Instead of a floral and vegetable display will they please stage a bug and insect competition, with one of every different kind of a "Victory Garden Fifth Columnist" pinned on a card with the name neatly printed underneath. I still have visions of carrying off the grand aggregate. Extra honours should also be awarded for specimens hitherto unknown, either to man or nature. They all inhabit my corner lot.

One morning, on hearing a noise at the back door, we found a delegation from the Amalgamated Cutworm and Potato Bug Society asking if they might see the blue prints of our garden. They explained that it was thought a more efficient job could be done if they didn't have to waste time in getting to the job. (Our N.S.S. might take a tip from this!)

Already plans are being laid for postwar social security, so perhaps it is only right the lower forms of animal life should be well provided for.

But why didn't someone tell me!—Heartbroken.

(The above was forwarded to the editor as "An open letter to the president of the H.E.P.C. Victory Garden Campaign.")

Editor, Hydro News: Congratulations after your first year and continued success in your efforts to provide the light on achievements and development in Hydro. When looking back over the twelve issues of your, or should we say "our" Hydro News, it gives us a great deal of pleasure and a sense of wonderment at the gigantic, ever-increasing and endless possibilities of Hydro. So our congratulations on a real asset and practical, efficient publication.—M. C. McLean, secretary-treasurer, Alliston Public Utilities Commission.

### MISSING OVERSEAS

Sergeant Observer George E. Bisheff, R.C.A.F., who was on the staff of the H.E.P.C. electrical engineering department (distribution section), from June to November, 1941, has been reported missing after operations over enemy territory. Sgt. Bisheff is a member of an all-Canadian bomber crew attached to an R.C.A.F. squadron.

# Historic KITCHENER



On the left is the fine new public utilities office at Kitchener. The black square to the left of the doorway is a memorial plaque on which the names of E. W. B. Snider, D. B. Detweiler and Sir Adam Beck are inscribed.



On the right is a view of the sales-room with the cashier's cages, and at the rear the offices of the commission officials.



**T**HEN Sir James Whitney, Premier of Ontario, took the finger of Hon. Adam Beck, and pressed the button which flooded the auditorium with light and a great cheer broke from the 8,000 people present. . . .

These facts, chronicled in the Dominion Archives at Ottawa, record the historic ceremony enacted at the inauguration of Hydro in Ontario.

This momentous event, one of the greatest milestones in Ontario's history took place in Kitchener (then Berlin) in October 1910. It marked the climax of eight years of hard work, against discouragement, and governmental apathy. D. B. Detweiler, E. W. B. Snider, and later Hon.

Adam Beck, continued their efforts until they reached the goal to which they aspired.

It is worthy of note that at a banquet held at the Walper House in Kitchener on June 9, 1902, twenty-five business men subscribed \$45 to defray the expenses of an engineer to discuss the possibility of transmitting power from Niagara Falls. From this humble beginning Hydro has grown until to-day its assets are nearly \$500,000,000.

## Inaugural Ceremonies

Addressing the gathering witnessing the turning on



of Hydro in Kitchener Sir Adam Beck (as he was later known) said: "It is fitting that power should be first turned on in the Town of Berlin, the first to receive the finished product, the home of men of vision, men who peered into the future with confidence, and called the first meeting of representative men together to consider means and ways of securing a supply of electric power for manufacturing and other purposes."

Hydro News features in this issue a photograph of that original subscription list. Of the men listed thereon only one now survives. He is August R. Lang, who has many interesting recollections of the early days of the Hydro movement in Kitchener.

"I first became interested in Hydro when one day working at the harness factory started by my father I found that 53 per cent of the power we required was taken up in running the shafting necessary to the operation of the various machines," Mr. Lang told Hydro News.

## Served 25 Years

"I was elected to the Kitchener commission in 1905 and served for 25 years retiring in 1931. Of that time I was chairman for 10 years," he continued.

While we had in 1908 contracted for 1,000 h.p. when it was turned on in 1910 we used only 380 h.p. and I remember there was considerable discussion about this particular phase of the commission's work.

"The first users of Hydro power industrially," he recalled, "was the Boehmer Box Company and Master's Mill. Other manufacturers quickly saw the advantage of using Hydro and our load soon grew so that we increased it beyond the original 1,000 h.p. for which we had contracted.

"The members of the Kitchener Hydro commission in

1910 were: A. L. Breithaupt, Chairman, Dr. J. J. Walters, George Lippert, myself, and Charles A. Hahn, who was mayor at that time," he concluded.

Although 86 years old, Mr. Lang, still takes an active interest in the harness leather tanning firm, which at one time was the largest of its kind in the British Empire, and he is still keenly interested in Hydro in Kitchener.

## Manufacturing Town

Kitchener is a manufacturing town with a diversity of industry comparable with many larger cities. It reflects the aggressiveness of its citizens who began many of its manufacturing plants from humble beginnings. Keeping pace with the industrial expansion of the city and always seeking to give the citizens the best possible service, Kitchener now has one of the most versatile Hydro systems in Ontario.

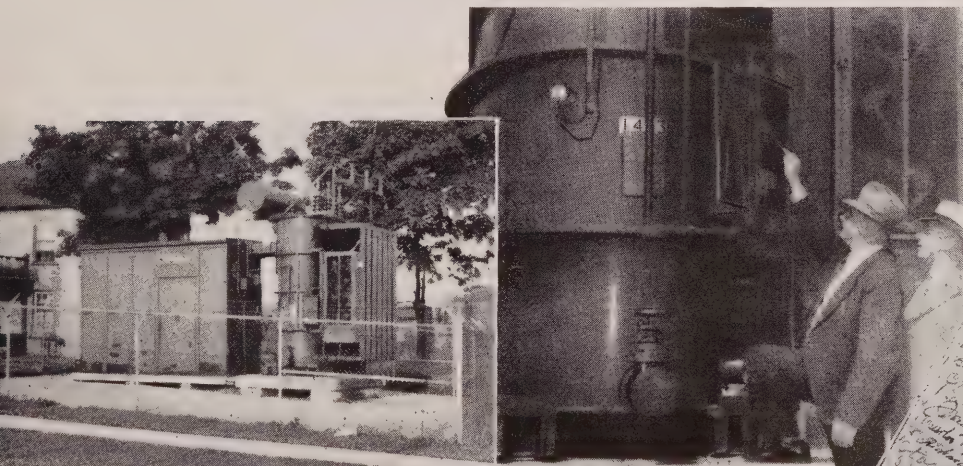
Commencing with an initial load of some 380 h.p. the system has been expanded until to-day the load is 26,017 h.p. Of this power 40 per cent is used directly in the war effort producing parts for airplanes, smoke bombs, army trucks, rubber goods, tank treads, and shirts.

First of the three large power using groups are the rubber companies, closely followed by the tanneries, and the third group comprises meat packers, furniture manufacturers, metal product manufacturers and the rope and twine factories. More than 46 per cent of Kitchener's Hydro revenue is derived from power consumers.

## Conservation Effective

There has been a sincere and effective effort on the part of the residents to conserve electricity for war indus-

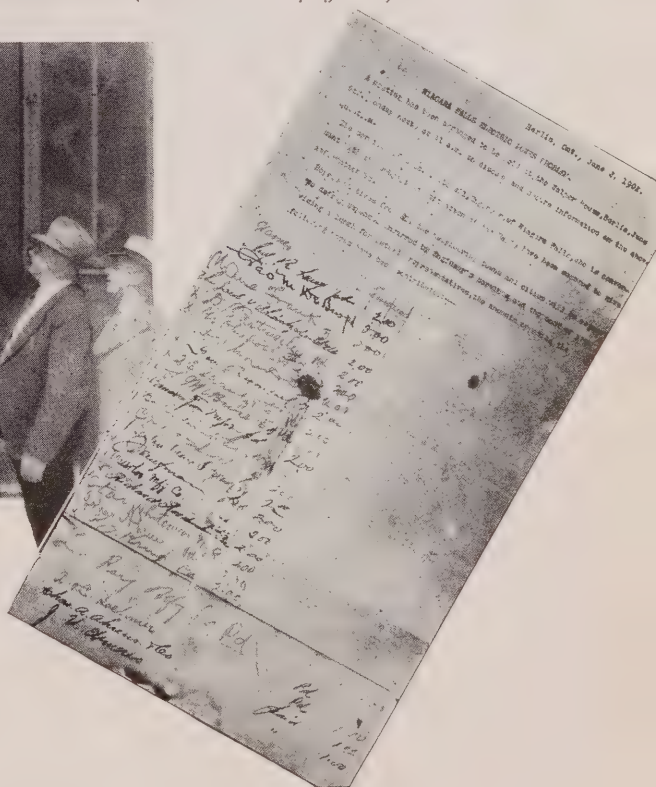
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The photograph on the left is the new No. 5 sub-station at Kitchener.

In the centre H. J. Graber, chairman of the local commission, pulls the switch putting the station in operation; behind him is general manager O. C. Thal.

On the right is the historic document listing the names of the men who subscribed \$45 to pay the expenses of an engineer who outlined the feasibility of transmitting power from Niagara Falls and laid the foundations of the present Hydro system.







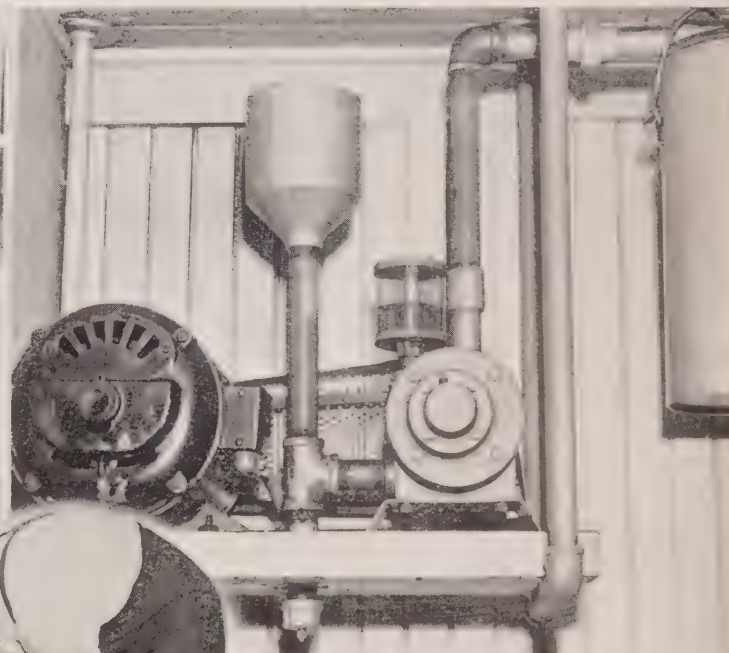
Having switched on the electricity which supplies the suction to the pipe-line milker, this farmer simply holds the cups of the milking machine in the right position and they snap into place. Hydro then goes to work while the farmer attends to another job.



Four or five minutes later, the job is completed and the cups are removed. The milk is then emptied into a waiting pail. The kittens certify that the quality is top grade.



Milking is now over and the time has come to thoroughly clean pails, cans and milking machines and other equipment which have been used. The Hydro hot water heater facilitates this operation.



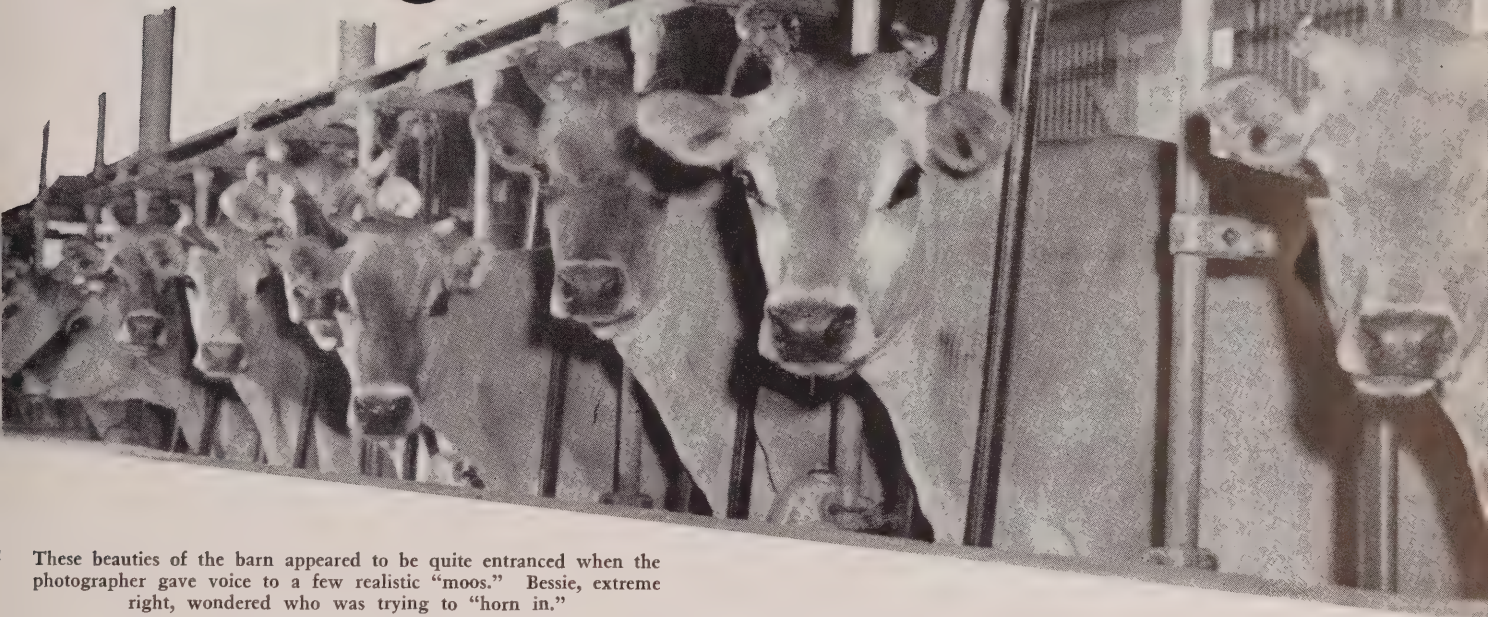
This seemingly uninteresting piece of apparatus is quite important at milking time on the farm for, at the snap of a switch, it provides the suction power which replaces manual operations

From the pails the milk is poured into large sterilized cans and placed in the cooler which is maintained at a constant temperature by Hydro power. In due course the cans are collected and the milk is prepared for home consumption.





# "COMBINED OPERATIONS"



These beauties of the barn appeared to be quite entranced when the photographer gave voice to a few realistic "moos." Bessie, extreme right, wondered who was trying to "horn in."

ON the war front, "Combined Operations" is a term which is synonymous with the co-ordination of the full striking power of land, sea and air forces upon the bastions of the enemy. While assuming an entirely different and less spectacular significance when applied to the rural front, it crystallizes the wide range of chores which Hydro power is performing on the electrified farm.

On a recent visit to a number of farms where electricity has been harnessed to speed the production of food Hydro News saw, at first hand, the kind of job being done by farmers of this province.

One successful farmer, who was interviewed, made this interesting observation: "Today, agriculture is a vital war industry and farmers are using all their resources, talents and techniques to help hasten victory."

"What," enquired Hydro News, "do you consider to be the most important job which Hydro is doing on the farm?"

"Milking," was the answer.

"Why do you say that?"

"Because," the farmer replied, "there is a definite lack

of experienced milkers. In fact there is such a shortage of men that some farmers have given up dairy farming and have switched to beef cattle. With electricity an inexperienced man can milk faster and more efficiently than an experienced hand milker."

## Farming Is "Big Business"

This particular farmer also told Hydro News that he could not imagine trying to operate his farm without electricity. "Farming today," he said, "is big business. The breeding of pure-bred stock alone is very complicated.

On this and other farms, Hydro News watched many of the "Combined Operations" which are being accomplished at the snap of a switch. Electricity is not only providing illumination throughout many farms but it is saving time and labour and doing countless chores and doing them more efficiently.

At milking time, it is electricity which goes to work beside the cows. The farm helper simply snaps on the switch, places the milking machine in position and slides

*(Continued on page 17)*





When the farmer snaps on this switch he starts a motor which operates the feed mixer in the upstairs loft.



Another helper is on hand in the loft ready to bag the mixed feed.



The farmer is shown emerging from a room which houses, among other things, a shallow well water pump which makes fresh water available for all purposes round the farm.



Hydro comes to the rescue when a little hot water is required in a hurry. The handle of the pail of water, shown above, is placed on the holder of the heater and the weight of the pail snaps on the switch. Within a few minutes, the element has heated the water.

And this illustration shows a deep well pump which is being examined by the farmer who believes in making a periodical examination of all electrical equipment used on his farm.





## "COMBINED OPERATIONS"

(Continued from page 15)

on the four suction cups which hold their position until the air is turned off. During the operation, one can hear a quiet, rhythmic beat, indicating the smooth technique of the electrified "milk maid." Farmers agreed that this method of milking is not only less laborious, but it is more efficient and hygienic.

### Electrically-Operated Cooler

After the top has been removed from the machine



The home on the electrified farm can have all the conveniences found in a modern city dwelling. This farm lady has the aid of an electric range as she does some preserving.

and the milk has been poured into a pail it is next poured into large milk cans which are then placed in an electrically-operated cooler which keeps the milk at an even temperature until it is taken away and prepared for home consumption.

After each milking, pails, can, milking machines and other equipment are cleaned and scalded, the hot water being provided by a Hydro water heater.

Another important chore which is done by electricity is the mixing of feed for the livestock. By using the electric mixer, the job is done more efficiently and with the minimum annoyance from dust.

On many farms, electricity is grinding grain, sharpening implements, raising hoists, operating ventilating systems,

pumping water and driving utility motors. But these are only a few of the benefits Hydro has brought to the farm. On one well-equipped property, Hydro News discovered that the farmer had installed radios in all his barns for "the pleasure of his help." "And," added this farmer, "the cows seem to like soft music."

### Has Increased Production

Then, too, the farmer's wife and the wives of the farm help can now cook on electric ranges instead of on wood-burning stoves, while many electric refrigerators are now to be found in farm kitchens. Electricity has not only meant an important saving of time and labour to the farmer but it has contributed materially to increased production and has helped to make the farm help more contented and the farm generally a very desirable place to work.

On the preceding pages are recorded a few pictorial impressions of the "Combined Operations" witnessed by Hydro News when visiting some of Ontario's electrified farms.

And another important piece of equipment in any home is, of course, the electric refrigerator. Here the farmer's wife is shown removing a nice juicy steak.





# at WATERLOO



Above is shown the Public Utilities plant as it was prior to the advent of Hydro. On the extreme left can be seen one of the reservoirs supplying the town with water.



On the right is the building as it is today. The addition on the right houses the transformers, street lighting controls and switching equipment.

**K** NOWN as the Hartford of Canada and mecca of music lovers, Waterloo, in common with Kitchener, Galt and other adjacent municipalities, is a name enshrined in the early history of Hydro in Ontario.

It was here in 1902, through the efforts of the Waterloo Board of Trade that the idea of Hydro was born, according to historical records.

E. W. B. Snider, one of the men who was intimately associated with Sir Adam Beck, was born in this town and lived to see his dream of busy factories run by electrical power generated at Niagara Falls, an accomplished fact.

He was not content to dream, however, but was prepared to fight, and did fight for many years, against disappointments and set-backs, until in 1910 the first power was turned on in Waterloo's sister town and closest neighbour.

## First Settled

First settled in 1806 by Abraham Erb, the town has

grown steadily until today its population is approximately 9,400.

The origin of its name has been lost with the passing of time, but is believed to be linked with the battle of Waterloo and the end of Napoleon's dreams of world conquest.

The erection of a saw and grist mill by Abraham Erb in 1816 marked the beginning of Waterloo's industrial history. With the coming of the railway in 1877 the town was given new impetus and opened the door for wider fields of distribution. A policy of liberal encouragement to manufacturers was inaugurated by the town council of the time. Industries multiplied until now in every part of the globe is found the products of Waterloo's factories.

The town's municipal history dates from 1857 when the first village charter was obtained.



In 1899 the town showed its faith in municipal ownership by voting \$40,000 for the purchase of the mains and the installation of a complete waterworks plant. In 1909 it acquired from William Snider the electric light plant which continued in operation until the advent of Hydro. The electrical department of the Waterloo Public Utilities Commission was inaugurated in 1910 and its load at that time was 130 horsepower. Since then it has grown until today it is 5,391 horsepower, serving 2,210 domestic consumers, 248 commercial customers and 74 industrial users.

From this humble beginning, assets have increased until now they total \$709,502 against which there are no outstanding debentures, the final payment being made in February, 1941.

### Flourishing Centre

One of Ontario's flourishing centres, Waterloo is a town of fine buildings, schools, churches, attractive homes and has a beautiful natural park and swimming pool.

It is known as Canada's largest insurance centre and

has a diversity of manufacturing interests, having been particularly free from boom periods followed by inevitable slumps. The industries include the manufacture of cotton felts, woollens, furniture, mattress springs, furniture upholstery and war materials such as land mines, smoke bombs, small steam engines for the Navy, commercial alcohol, radio equipment and acid tanks. It might be mentioned that more than 40 per cent of the power used in Waterloo goes directly into the manufacture of munitions.

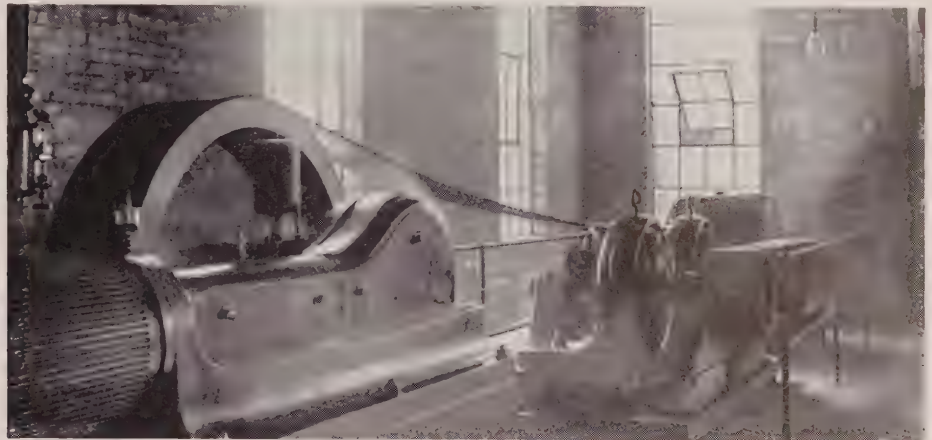
Waterloo is the home of Joseph E. Seagram, popularly known as the "King of horse racing," and his famous racing stables are located there.

### First Schoolhouse

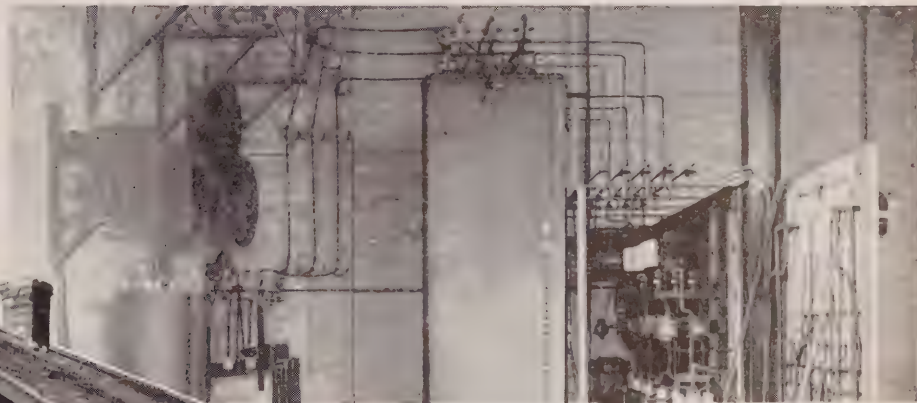
An interesting landmark is the first schoolhouse built in 1820. Being in a sparsely populated settlement, school in those days was only held about three months of the year and pupils ranged from small children to adults of 25 years.

The town is justifiably proud of its Musical Society

*(Continued on page 23)*



In the upper photograph is shown the generator in use at Waterloo prior to the advent of Hydro. At that time it was run by a "producer gas" propelled engine. Right is shown the switching equipment in use prior to Hydro.



On the left is a photograph of the first school house erected in Waterloo County. The building is well preserved in Waterloo's civic park.





OUR sequence of luscious fruits, like all good things in life, should this year seem just a little more valuable—a blessing to be made the most of for its brief stay, and also to be conserved for later usefulness.

Nothing that the Hydro Home Forum can devise for you can better the deliciousness of the fresh fruit itself. Therefore, serve bowls of berries and cream to your families as often as you think they will be enjoyed. (Like vegetables, there's more goodness in the product as it comes from the garden.) Finely pulverized sugar is better than granulated sugar on fruits and a smaller amount does the job, because the fruit seems to absorb it more completely.

#### Dessert Suggestions

But there are other grand things to be done with fruits—desserts by the dozen that will provide tasty dishes for your family, and stretch it for the welcome guests in uniform. A few suggestions are: berry shortcakes, berry jelly roll, fruit layer cake, Boston fruit cream pie and graham gems with fruit.

If your sugar ration has too many other calls on it to permit sugar-demanding desserts, let other sweeteners or methods help you. For instance, sweetened condensed milk sweetens refreshing sherbets and with very little aid, corn syrup helps to sweeten fruit pies. Instead of serving a nappie of fruit, place on a bed of crisp lettuce—it takes a minimum amount of sugar to sweeten the salad dressing used instead of cream and sugar. Another suggestion is to crush a few berries with just a tablespoon of water, dissolve the sugar in the liquid and pour over whole berries.

#### Preserving

Canning, jellifying and jamming are the preserving methods used by the homemaker. Choose firm ripe fruits for canning; slightly underripe for jellifying and the softer fruits for making jam.

In order to make jelly (sparkling, good flavour and firm, not gummy) the fruit juice must contain acid and pectin. Certain fruits are low in acid content: blackberries, sweet apples, quinces and blueberries. These should have some lemon juice, tart apple juice or rhubarb juice added to them. Fruits that jell readily are, sour apples, crabapples, currants, gooseberries, grapes, sour plums and cranberries.

#### Directions for Jelly Making

Wash fruit, cut apples in quarters without removing the skin or cores unless defective; cut plums in halves; wash grapes and currants, do not remove the stems. Add enough water to cover apples, crabapples, quinces and other dry fruit. Do not add water to currants, grapes and others. Cook quickly till the pulp is soft, then drain through a jelly bag without pressure—4 to 6 hours is usually long enough to let the fruit drain. Measure the fruit juice, and boil rapidly for 8 to 10 minutes.

Skim the fruit juice as it boils. Add warm sugar. Use  $\frac{3}{4}$  cup of sugar to each cup of fruit juice. Stir until dissolved. Boil only 3 to 5 minutes after adding sugar. Test to see if the jelly sheets from spoon by letting some of the hot syrup fall from the side of the spoon; if the few drops tend to drip into one point the product should be poured immediately into sterilized glasses. Pour a thin layer of paraffin on top. When cold add another thick layer of paraffin. Label and store in a cool, dark place.

Jams are made of crushed fruit and contain a large amount of sugar in proportion to fruit juice and pulp. Some of the fruit should be slightly underripe to furnish pectin, which makes the product jell quickly. Fruits rich in pectin are: grapes, currants, gooseberries, sour plums and apples. Combine other fruits with these in equal quantities. Add sugar in the proportion of  $\frac{3}{4}$  pound to 1 pound

(Continued on page 23)



A capacity audience of Hydro Victory Gardeners and their wives gathered to watch the canning demonstration given by Miss Edith Emma Muir, Hydro Home Economist. On the right is a general view of the interested spectators, while on the left Miss Muir adjusts the tops on the finished product.



## CONCERNING CONCRETE

*(Continued from page 4)*

with a small diamond saw that forms part of the laboratory equipment.

As considerable importance is attached to the durability of all materials used in concrete, soundness tests are made on the aggregates before they are accepted for use. Among other tests the materials are subjected to alternate cycles of freezing and thawing, whereby a measure is had of their ability to withstand frost action in service. In some instances length measurements are made over a period of time to determine what volume changes are likely to occur when the aggregates are incorporated in hardened concrete.

Having determined that the aggregates themselves are of satisfactory quality, tests are made to determine how these materials can be most economically combined to produce concrete of the quality required for the work in question. Batch quantities are weighed to a fraction of an ounce and concretes are mixed to the required consistency in a mechanical mixer especially designed for laboratory work. Standard compression or transverse specimens are cast in machined steel moulds. The following day these moulds are stripped, the specimens are weighed and are stored in a moist room where temperature and humidity are under constant control. After curing for a specified period of time strength tests are made. Test results are finally analyzed, values are plotted in chart form and calculations are made to establish proportions for field use. From this point on, responsibility for the quality and control of the concrete is in the hands of the field inspector.

### Field Inspection

The quality of a finished concrete structure depends largely upon the care exercised in manufacturing placing and curing the concrete during construction. A trained inspection staff is assigned to every major construction project. Their function is to control the quality of the concrete and to see that all operations are carried out according to methods that will ensure permanent and durable structures. Even on the smallest construction operations, guidance is given in the selection of aggregates and in the proportioning of the concrete.

The field inspection covers every operation from the obtaining of aggregates at the pit or quarry to final curing of the concrete in place. All necessary tests are made in a complete field laboratory established on the job. The inspector is responsible for the quality of materials used in the concrete, the proportioning and control of the mix, mixing, transporting, placing, finishing, curing and stripping. Special attention is directed to the placing of the concrete and to providing adequate curing, particularly during cold weather. Complete reports are prepared daily on all phases of the inspection.

### Inspection of Existing Structures

One phase of the inspection ends with the completion of construction work but thereafter, at intervals of about three years, a detailed examination is made of each structure. These inspections are made to detect disintegration or any unusual condition that might affect the integrity of the structure. Detailed notes are made during these inspections and photographs are taken to provide a permanent record of the condition of the concrete. Observations made

in this way furnish a wealth of information which is put to useful service in improving our methods of design, control and construction.

### Research

Continued research has done much towards furthering our knowledge of concrete. These studies, carried out in the laboratory and in the field over a period of many years, have contributed largely to the development of methods now used on Commission work.

Concrete research within the Commission is now carried out under the direction of a special subcommittee appointed by the Main Research Committee. Active projects at the present time include the use of absorptive form liners whose purpose is to produce more durable concrete surfaces; study of heat rise in mass concrete and factors tending to cause cracking in large concrete dams; investigation of volume changes in concrete caused by the combination of certain aggregates with cements of high alkali content; tests to determine the deterioration of cement in storage; studies on the durability of concrete and methods of test for measuring the effects caused by frost action or other destructive influences that hasten the breakdown of concrete in service.

## Lightning Strikes Preston Sub-Station



Maybe lightning doesn't strike twice in the same place but it struck the Hydro sub-station at Preston twice within a few minutes, with the result shown in the above photograph.

The first bolt destroyed the feeder lines at one end of the building and the second one shattered the transmission lines at the north end. Despite this extensive damage Hydro workmen went to work and within three and a half hours they had pieced together what remained of the station and were sending out power to speed the war work carried on in the district.

The terrific explosion which occurred when the bolt struck the entrance bushings reduced the upper half of the north wall to rubble.

## KITCHENER

(Continued from page 13)

tries. Records of the commission reveal that up to the time restrictions went into effect the load was increasing at a rate of approximately 500 h.p. per month. Immediately the order became effective a saving of 1,745 h.p. was effected and for the next three months, 2,406; 2,376; and 2,765 h.p. respectively, were saved over the corresponding months in the previous year.

The Kitchener system has shown a steady growth since its inception in 1910 at which time it was served by a double-circuit 13,200-volt pole line from the H.E.P.C.'s high-tension station.

At that time the largest consumer was the Dominion Rubber Company, and this firm was served directly over a single-circuit 13,200-volt line. Within five years it was found necessary to increase the capacity of the sub-station and an addition was built to house new transformers and switches necessary to take care of the rapidly increasing loads.

### Expand Further

There was a further expansion of the local facilities in 1920 when a second sub-station was constructed on Breithaupt Street with a 3,000 kv-a capacity. To this was later added three 750 kv-a transformers and the 13,200-volt, double-circuit line was extended to supply this sub-station. This set-up was found sufficient during the depression years between 1930 and 1936, but, in 1937, a definite upswing was evident in the power load and it became necessary to provide additional facilities.

A growing industrial area in the south ward prompted the construction of a third sub-station on Courtland Avenue. This new station with 3,000 kv-a capacity was served by a new single circuit 13,200-volt line erected along the C.N.R. and the L.E. and N. railways. Also in 1938 a second underground cable duplicating one laid earlier was installed between the high-tension station and the original station. This provided not only ample conductor capacity but added security of the 13,200-volt supply by reason of the two overhead and two underground supply circuits.

### Show Foresight

Following the outbreak of war it became apparent that the industrial requirements would make increasing demands upon Hydro power facilities. The local commission with the foresight which has characterized its administration concurred in a recommendation made by the local manager that the Municipal Department of the Hydro-Electric Power Commission make a detailed study of existing and probable future needs in consultation with the local management.

Recommendations and estimates were supplied to the Kitchener commission and, following discussion of the report with H.E.P.C. engineers, it was adopted in its entirety.

A common practice for many years, that of using a primary loop or ring, was not followed, but a radial system of transmission was used. In addition, each of the sub-stations can be supplied over alternative lines. Also, there are heavy secondary conductors between the sub-stations, broken at midway points by gang-operated disconnecting switches. The routes of these secondary lines are separate from those of the 13,200-volt lines so that damage to the latter will not interfere with the secondary interconnections.

Instead of standby or spare transformer capacity being held in units nor normally under load, extra capacity in all the sub-stations over and above normal requirements was provided. Thus, in the event of failure of one unit, its load can be carried by the two adjacent units.

### Many Fine Homes

Kitchener is a city of fine homes and gardens and according to official figures 69 per cent of the people own their own homes. This percentage was much higher prior to the outbreak of war when a number of apartment houses were built to accommodate an influx of war workers to the plants in the city.

It is the birthplace of many nationally known people including Rt. Hon. W. L. Mackenzie King, Wilfred Campbell, Sir Adam Beck, who was born in Baden a few miles from Kitchener, Homer Watson, D. B. Detweiler, and E. W. B. Snider.

It was in Kitchener that J. Albert Smith, now a commissioner of the H.E.P.C., first embarked on his career of public service. A native of this progressive Western Ontario District, Mr. Smith served for a number of years as alderman and chief magistrate. During his term as Mayor he was also vice-president of the O.M.E.A., and was in close touch with Hydro municipalities and their problems throughout the province.

An enthusiastic nature lover and an authority on horticulture, he was president of the Kitchener Horticultural Society from 1926 to 1934. During this time he played an active part in the development of the rock gardens which are now a landmark at the eastern approach to the city.

### Has Beautiful Parks

Located near the centre of the city is beautiful Victoria Park, in which band concerts are given every week. The land was reclaimed from swamp and a creek which meanders through it has been dammed to form an artificial lake which in the summer provides boating and in the winter forms a natural sheet of ice for skating and hockey.

Kitchener, even before the advent of Hydro, was an exponent of public ownership, and in 1903 purchased the gas and electric plant then owned by the Berlin Gas and Electric Company, at a cost of \$90,000.

From this humble beginning has grown the present public utilities commission until Hydro assets are now in excess of \$3,500,000 while liabilities approximate \$400,000. A debt retirement programme has been adopted by the commission which will free it from debt in 1950.

Similarly power costs have been reduced in accordance with the Hydro policy of providing power at cost. To-day the domestic rate is 1.07 cents per kilowatt hour, a reduction of approximately 4 cents since the inception of Hydro.

### Progressive Administration

A continuity of sound and progressive administration has characterized the growth of Hydro in this historic Ontario centre where the commissioners and key officials have many years of outstanding service to their credit. On the commission at present are: H. J. Graber, chairman, E. E. Ratz, vice-chairman, G. W. Gordon, A. M. Bitzer, and Mayor J. Meinzing.

O. C. Thal, the general manager, has served the local commission for 31 years. The late Smith Gofton, superintendent of the electrical department served for 38 years, Miss M. Shantz, secretary-treasurer, 30 years and Alford Thaler, the purchasing agent, 23 years.



## Hydro Home Forum

(Continued from page 20)

raw fruit. Boil only 3 to 5 minutes after adding the sugar. Test the jam—it is ready to bottle as soon as a small amount sheets from the side of a spoon. Jam thickens upon standing. Pour into jars and let cool before sealing with paraffin. Put a metal cover over the wax, if available.

Fruit may be canned in quart jars, which are now available. Fruit may be either cold-packed (cleaned and put into sterile jars) or hot-packed (cleaned, pre-cooked for about 3 minutes and put into sterile jars), then processed in deep preserving kettle, covering the jars with boiling water two inches above the tops.

### Electric-Oven Method

If you have an electric range with thermostatic oven control, then canning fruit in the oven is the way to prevent heating your kitchen, oven-canned fruits retain their true flavour. The temperature of the pre-heated electric oven should be only 275 degrees, but the cooking time is 10 minutes longer than the water-bath method. Fill jars with fruit, then pour in fruit juice, water or syrup to overflow; partially seal. (With screw tops, turn tight, then unscrew half a turn.) Place jars on oven shelf adjusted 2 or 3 inches from bottom of oven. Place a jelly-roll pan or broiling pan with a little hot water in it over the baffle, covering the element, to catch any juice which may seep out and burn. Space jars about two inches apart so heat may circulate freely. Do not open door during processing period. When processing is completed and jars taken out of oven, place them a little apart on a newspaper-covered table to cool; listen for any hissing sound which means jars are not airtight. If they are not airtight, unscrew top, quickly remove any fruit particle on rim of jar with a scalded knife, reseal lid and seal.

### Canning Without Sugar

Many will use fruit juices in canning without sugar. Small, soft fruits especially retain their flavour and colour if processed as follows; use the softer, ripe fruits to make juice by crushing in a saucepan (with a little sugar if you wish), then add a little boiling water. Pour this over firmer berries packed in a jar and process for five minutes longer than when using syrup method. Fruit will not spoil if processed correctly—sugar helps in keeping shape and true colour of fruit.

Making syrups with half honey will save sugar. Do not use more than half honey or you may find the flavour strong.

### Syrup Making

For small or sliced fruits, use 1 cup sugar to 1½ cups water, which makes 2 cups of syrup. For each quart sealer allow about 1 cup of syrup for small fruit; and for large fruit allow 2 cups of syrup.

Recipes are supplied upon request from the Hydro Home Forum.

## Annual Rose Show



(Photos by Wm. Harland of the Commission staff.)

In the above picture are included some of the prize-winning entries in the annual rose show sponsored by the horticultural section of the Ontario Hydro-Electric Club.

The vase of spring flowers on the extreme left won a "first" for G. C. Argo; next is a first prize vase of roses displayed by J. F. MacLaren, who also won the sweepstake, best rose in the show, five "firsts" and one "second"; the bowl of roses took a "first" for O. Kleiser, who also won a second prize; the award for the best basket of flowers went to Miss Marjorie Petrie, as well as a "first". In the lower right hand corner are shown the best rose in the show exhibited by J. F. MacLaren, and the best peony entered by H. L. Wagner, who also had three "firsts" and two "seconds."

Other prize winners were: A. H. Frampton, two "firsts" and four "seconds"; Miss Shirley McCarten, two "firsts"; T. C. James, one "first" and two "seconds"; S. Appleton, one "first"; G. C. Thomas, one "first"; Dave Forgan, one "first"; A. H. Sharpe, one "first"; W. H. Carr, four "seconds"; Miss Alberta McAllister, one "second"; J. Fitzsimons, one "second"; and R. N. Adams, one "second".

Following the show the flowers were divided into bouquets and proceeds from a draw for them were turned over to the Consolidated War Services Fund.

### AT WATERLOO

(Continued from page 19)

Band, which since its inception in 1882 has won high tribute in many competitions.

The office of the Waterlool Public Utilities Commission is located in the town hall on Erb Street, and the municipal affairs are under the competent direction of William Henderson, chairman; C. R. Gies, vice-chairman, William Kress and Wilbert Gleiser, commissioner; F. B. Relyea, mayor; Eby Rush, superintendent, who has been with the Commission for 33 years; and secretary-treasurer J. F. Hertel for 29 years.

# Around the Hydro Circuit

## WATERLOO'S MAYOR

**F. B. RELYEA**, mayor of Waterloo, was born in 1903, elected alderman in 1940 and elevated to the mayor's chair in 1943.



In business life he is an actuary with one of the large life insurance companies located in Waterloo. He is a Fellow of the Actuarial Society of America, holds the degree of F.A.T.A. from the American Institute of Actuaries, and a B.A. degree from the University of Toronto.

He has many community interests and is chairman of the Waterloo C.D.C. and the Post War Reconstruction Committee. He is also a past president of the Kitchener-Waterloo Gyro Club.

## CONGRATULATIONS

**LIEUTENANT-COMMANDER CHARLES G. R. McHARDY**, R.C.N.V.R., formerly with the H.E.P.C. electrical engineering department, has recently been promoted to lieutenant-commander in charge of the draughting room and alterations to naval vessels at the Esquimalt R.C.N. Dockyard.



"Mac," as he is known to his colleagues, had been associated with the Commission for over twenty years prior to his naval appointment. Before coming to the Hydro he worked at the John Brown Shipbuilding Company on the Clyde, covering trial trips on a wide variety of naval craft and, later with the Bethlehem Steel Company at Allentown, Pennsylvania. For about a year previous to entering the navy he was with the Toronto Shipbuilding Company.

His many Hydro friends will recall him as the "office strong man," and he kept in condition by wrestling, golfing, swimming, playing tennis and handball

## COMMISSIONER

**WILBUR H. GLEISER**, was born in 1896, and has been a member of the Waterloo Public Utilities Commission since 1938. He is manager of the Waterloo Trust and Savings Company in Kitchener and is interested in sports particularly fishing and golf.



## SUPERINTENDENT DIES

**SMITH F. GOFTON**, electrical superintendent of the Kitchener Public Utilities Commission, died recently following a lengthy illness. Mr. Gofton was 62 years of age and had been in the employ of the Commission for 37 years, during which time he took a great interest in the remarkable growth of the Utility. He was highly esteemed by the Commission and was one of the most loyal and faithful employees. "Smitty," as he was better known among his friends, was ready at any time of day or night to answer emergency calls.

## MEET THE CHAIRMAN

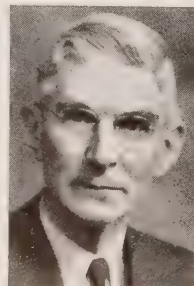
**WILLIAM HENDERSON**, Chairman of the Waterloo Public Utilities Commission hails from the land of the heather, where he was born in 1876. He came to Canada in 1910 and five years later started in the bakery business in Waterloo.



He served as alderman in 1921, was reeve in 1922 and 1923, becoming mayor in 1924. He was elected chairman of the commission in 1926 and has held that position since. Among his special interests he lists fishing, Hydro, and making dough.

## GALT MANAGER

Although not a professional globe-trotter, **H. R. HATCHER** has covered a good deal of territory. Manager of the Galt Public Utilities Commission and secretary of District No. 6, O.M.E.A., the ubiquitous Mr. Hatcher was born in Brantford, educated in Essex County and Pittsburgh, Pa., moved to Walkerville, and finally settled in Galt. During the last war he served on the high seas aboard a destroyer of the Royal Canadian Navy.



Mr. Hatcher was interested in Hydro from its inception and became chairman of the first Hydro Commission in Walkerville. He also has the distinction of having been the youngest mayor in Walkerville's history, and was a member of the school board. At the present time he is president of the

Board of Trade in Galt.

A handy man with a rifle, Mr. Hatcher finds immense enjoyment in his hobbies of hunting and skeet shooting, and they say he's quite at home in a speedboat.



# Around the Hydro Circuit

## SUPERINTENDENT

Thirty-three years with Hydro is the record of **EBY RUSH**, superintendent of the Waterloo Public Utilities Commission.



Following his education at public, high school and International Correspondence school, Mr. Rush, who was born in 1890, worked in New Hamburg in a steam-electric plant for three years. In 1910, with the inception of Hydro in Waterloo, he joined the staff as a line foreman and served in that capacity until 1939, at which time he became superintendent. He is a member of the Association of Professional Engineers.

## G. R. HOWSE DIES

George W. Howse, aged 59 years, district electrical inspector, H.E.P.C., died recently at his home in Port Nelson. He had been ill since May.

Born in Beamsville, he received his education there and in Hamilton and before he was quite 20 years old went to western Canada, to be employed for a time by the T. Eaton Company in Winnipeg. On his return east, he started in the electrical business with the W. C. Edwards Company of Ottawa, and was afterwards electrical superintendent of the Almonte Electric Light Company, installing the first two generators on the Trent Valley canal.

In 1910 he joined the staff of the Commission and was stationed at St. Thomas. From there he went to Hamilton as an inspector, where he remained until his death.

Mr. Howse was keenly interested in sports, and in his youth was a sprinter, jumper and rugby player. He was a member of the Tecumseh Athletic Club and the Burlington Golf and Country Club.

Mr. Howse was a member of the Masonic order; Murton Lodge of Perfection of the Scottish Rite and was president of the United Empire Loyalist Association.

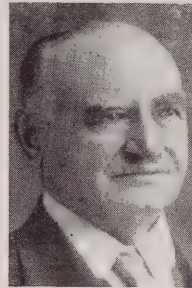
## DECORATED

Sergeant George A. Hickson of the Royal Canadian Engineers, and formerly a Hydro lineman with Elmira rural power district, has won the distinction of being the first Canadian to win two battle decorations in this war, having recently been awarded the Military Medal for "gallant and distinguished services in North Africa." Sgt. Hickson had previously won the Distinguished Conduct Medal at Dieppe.

LS. Stanley H. Heywood, of Port Credit, who was on the staff of the H.E.P.C. filing department, has recently received the Distinguished Service Medal. He is one of

the six ratings, along with two officers of the Canadian corvette Regina who have been decorated for sinking an Italian submarine in the Mediterranean.

## VICE-CHAIRMAN 18 YEARS



Vice-chairman of the Waterloo Public Utilities Commission is **CONRAD R. GIES**, whose hobby is raising pure-bred holstein cattle.

He has served the commission for the past 19 years and has been vice-chairman for 18 years. He has also served on the board of education and the sewer commission.

Prior to his retirement, Mr. Gies farmed near Waterloo and was the first Ontario farmer to grow registered wheat.

## PROMOTION

Lieut. Clark F. Moses, popular manager of the Mitchell Public Utilities Commission Hydro shop, has been promoted to the rank of captain. Captain Moses, who is with the Perth Regiment, is attached to headquarters at Stratford Armouries.

## KINGSTON CHAIRMAN

**THOMAS ALEXANDER ANDRE**, after eight years' service as commissioner, was elected chairman of the Kingston Public Utilities Commission for 1943. Mr. Andre, a general contractor in private life, was born at the beginning of that illustrious decade known as "the gay nineties".



The new chairman has for some years taken a leading part in the city's municipal life. He was a member of Kingston city council for four years, chairman of the city parks body for two years, and also served as chairman of the board of works.

Mr. Andre is a past president of the Kingston Chamber of Commerce and a member of the Rotary Club. He has one son on active service with the Royal Canadian Engineers, with the rank of Lieutenant; one son in the R.C.A.F., and two sons, graduates of Queen's University, in the service of the Dominion Government.

A sports enthusiast, Mr. Andre is a close follower of baseball and hockey, and enjoys hunting.



# Lighter Lines

When Mose was told that poor Rastus had been shot dead by Judge Hicks while he was stealing the judge's chickens he merely replied: "Oh, well, it might have been worse."

"How could it have been worse?" indignantly asked the informant. "Poor Rastus is dead! De judge just nachually blow the head right off him. What could be worse dan dat?"

"It might have been worse," repeated Mose. "If the jedge fire off de gun de night before he might have blow de head off me."

\* \* \*

Chinese Patient (on telephone): "Doctor, What time you fixee teeth for me?"

Doctor: "Two-thirty, all right?"

Chinese: "Yes, tooth hurty all right, but what time you fixee?"

\* \* \*

A mountaineer took his son to a school to enroll him. "My boy's arter larin', what dya have?" he asked the teacher.

"We offer English, trigonometry, spelling, etc.," she replied.

"Well give him some of thar triger-nometry; he's the worst shot in the family."

\* \* \*



"An ex-shoe salesman was the closest thing to a blacksmith's helper I could get!"

Wife: "My husband has no bad habits whatsoever. He never drinks, and spends all his evenings at home. Why he doesn't even belong to a club."

Friend: "Does he smoke?"

Wife: "Only in moderation. He likes a cigar after he has had a good dinner, but I don't suppose he smokes two cigars a month."

\* \* \*

The midday whistle had blown when Murphy shouted, "Has anyone seen me vest?"

"Sure, Murphy," said Pat, "and ye've got it on."

"Right and I have," replied Murphy, gazing solemnly at his bosom, "and it's a good thing ye seen it or I'd have gone home without it."

\* \* \*

"Janitor, you could cool our apartment nicely if you would run ice-water through the radiators."

"Can't be done, madam."

"What did you have in them last winter?"

\* \* \*

Office-Boy (nervously): "Please, sir, I think you're wanted on the 'phone."

Employer: "You think! What's the good of thinking?"

"Well sir," the voice at the other end said, "Hello is that you, you old idiot?"

\* \* \*

A huge elephant and a tiny mouse were in the same cage at the zoo. The elephant was in a particularly ugly and truculent mood. Looking down at the mouse with disgust he trumpeted, "You're the puniest, the weakest, the most insignificant thing I've ever seen!"

"Well," piped the mouse in a plaintive squeak, "don't forget, I've been sick."

\* \* \*

"Your fiance is a charming man. He has a certain something." "Yes, but I would rather he had something certain."

The youngster was being chided for his low grades. As an alibi he said, "Well all the boys at school got C's and D's, too."

"All of them?" he was asked. "How about little Johnnie Jones who lives down the street?"

"Oh, he got high grades," the youngster admitted. "But you see, he's different. He has two bright parents."

\* \* \*

A railroad agent in Africa had been "bawled out" for doing things without orders from headquarters. One day his boss received the following startling telegram:

"Tiger on platform eating conductor. Wire instructions."

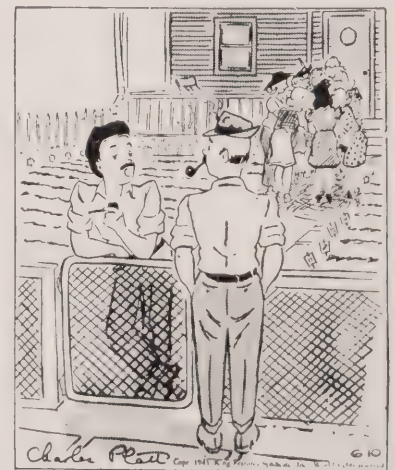
\* \* \*

"What are you raising in your garden this year?"

"Johnston's Plymouth Rocks, Brown's Leghorns and Smiths' Wyandottes."

\* \* \*

A Frenchman was relating his experience in studying the English language. He said: "When I first discovered that if I was quick, I was fast; that if I was tied, I was fast; if I spent too freely, I was fast; and that not to eat was to fast, I was discouraged. But when I came across the sentence, 'The first one won one-dollar prize.' I gave up trying."



"New baby? Naw! First rad-ish!"



# Hydro Load Gains

## Reflect War Tempo

Featured by heavy demands from war industries, Ontario's primary power load during June, 1943, increased by some 55,000 horsepower over that for the corresponding month in 1942.

Based on the maximum 20-minute peak horsepower load for the period, the monthly summary portrays load conditions on all four systems and the Northern Ontario Properties. Large individual gains were recorded in the Niagara and Eastern Ontario systems, with increases of approximately 50,000 and 20,000 horsepower respectively.

The total primary load demand served by the Commission during June of this year, representing an increase of 2.6 per cent, was 2,190,082 horsepower, as against 2,135,537 horsepower in June, 1942.

Combined primary and second loads experienced a gain of 57,000 horsepower over last year's figure, when the 1942 load of 2,243,312 horsepower was increased by 2.5 per cent.

### PRIMARY AND SECONDARY LOADS

	Maximum 20-Min. Peak H.P.		Per Cent. Increase
	May, 1943	May, 1942	
Niagara System .....	1,701,877	1,629,357	4.5
Georgian Bay System .....	50,590	48,760	3.8
Eastern Ontario System .....	199,524	180,460	10.6
Thunder Bay System .....	111,422	125,938	-11.5
Northern Ontario Properties .....	236,932	258,797	-8.4
Total of all systems .....	2,300,345	2,243,312	2.5

## BOAT TRIP CANCELLED

The Georgian Bay District No. 2 O.M.E.A. meeting which was announced, in the May issue, for Pork Mac-Nicoll, will be held in Owen Sound on August 6. The boat trip which has been a feature of this meeting, had to be cancelled due to the coal situation.

## LIGHTS OUT

(Continued from page 11)

contract with the power company expired, began. Every available lineman was pressed into service, and miles of wire and thousands of poles were installed within the few months remaining before the old type of lighting had to be replaced.

## Early Days Recalled

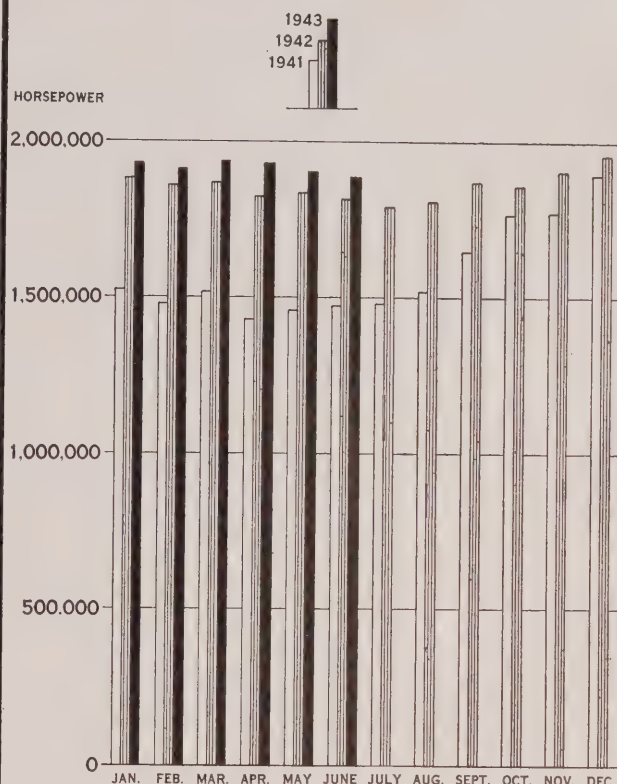
Street lighting was the responsibility of the city engineer's department until the consolidation of Hydro in 1911, and the setting up of the Toronto Hydro Electric commission.

"Those were stirring days," Mr. Schwenger recalled. "We kept every available lineman busy, and so rapid was the expansion of the system that we had difficulty training linemen fast enough," he declared.

Since the outbreak of the war, he revealed, Toronto's street lighting load has been cut from 8,250 horsepower, operating 48,684 lamps to 6,780 horsepower, operating 41,974 lamps.

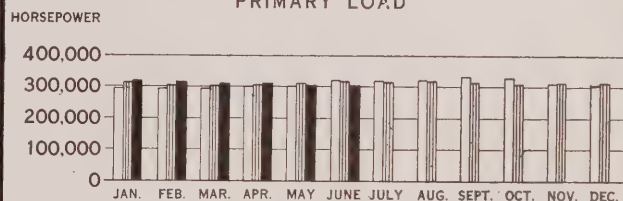
### SOUTHERN ONTARIO SYSTEMS NIAGARA — GEORGIAN BAY — EASTERN ONTARIO

#### PRIMARY LOAD



### NORTHERN ONTARIO PROPERTIES AND THUNDER BAY SYSTEM

#### PRIMARY LOAD



#### PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	JUNE, 1943	JUNE, 1942	
NIAGARA SYSTEM .....	1,636,059	1,586,595	+ 3.1
GEORGIAN BAY SYSTEM .....	50,590	48,760	+ 3.8
EASTERN ONTARIO SYSTEM .....	199,524	180,460	+ 10.6
THUNDER BAY SYSTEM .....	103,706	106,903	- 3.0
NORTHERN ONTARIO PROPERTIES .....	200,203	212,819	- 5.9
TOTAL .....	2,190,082	2,135,537	+ 2.6

## MUNICIPAL LOADS, MAY, 1943

NIAGARA SYSTEM (25-Cycle)			Popula- tion		Popula- tion	
	H.P.	Popula- tion		H.P.	Popula- tion	
Acton	1,498	1,903	Erie Beach	8	21	
Agincourt	203	P.V.	Essex	536	1,886	
Ailsa Craig	124	487	Etobicoke Twp.	7,327	V.A.	
Alvinston	94	649	Exeter	631	1,654	
Amherstburg	801	2,704	Fergus	1,245	2,759	
Ancaster Twp.	335	V.A.	Fonthill	148	860	
Arkona	55	403	Forest	495	1,562	
Aurora	1,307	2,821	Forest Hill	6,382	12,172	
Aylmer	889	1,985	Galt	11,512	15,126	
Ayr	154	760	Georgetown	1,669	2,452	
Baden	461	P.V.	Glencoe	185	763	
Beachville	726	P.V.	Goderich	1,496	4,674	
Beamsville	409	1,227	Granton	70	P.V.	
Belle River	177	836	Grimsby	792	1,988	
Blenheim	490	1,873	Guelph	10,899	23,074	
Blyth	100	662	Hagersville	1,002	1,524	
Bolton	195	629	Harriston	415	1,292	
Bothwell	115	683	Harrow	460	1,092	
Brampton	2,494	5,975	Hensall	176	686	
Brantford	20,891	31,622	Hespeler	2,824	2,938	
Brantford Twp.	834	V.A.	Highgate	91	322	
Bridgeport	127	P.V.	Humberstone	498	2,831	
Brigden	77	P.V.	Ingersoll	3,189	5,757	
Brussels	120	784	Jarvis	179	513	
Burford	231	P.V.	Kingsville	490	2,453	
Burgessville	44	P.V.	Kitchener	26,017	35,456	
Burlington	1,495	3,925	Lambeth	118	P.V.	
Burlington Beach	395	1,474	LaSalle	237	907	
Caledonia	321	1,430	Leamington	1,277	6,048	
Campbellville	35	P.V.	Listowel	1,396	2,984	
Cayuga	98	700	London	38,578	77,105	
Chatham	6,354	17,184	London Twp.	453	V.A.	
Chippawa	273	1,228	Long Branch	1,279	4,258	
Clifford	101	491	Lucan	177	643	
Clinton	598	1,879	Lynden	103	P.V.	
Comber	149	P.V.	Markham	328	1,175	
Cottam	65	P.V.	Merlin	76	P.V.	
Courtright	44	355	Merritton	10,942	2,916	
Dashwood	97	P.V.	Milton	1,401	1,915	
Delaware	57	P.V.	Milverton	357	994	
Delhi	327	2,430	Mimico	2,445	7,987	
Dorchester	81	P.V.	Mitchell	654	1,670	
Drayton	124	528	Moorefield	51	P.V.	
Dresden	398	1,525	Mount Brydges	87	P.V.	
Drumbo	101	P.V.	Newbury	25	288	
Dublin	30	P.V.	New Hamburg	557	1,441	
Dundas	2,822	5,245	Newmarket	1,722	3,800	
Dunnville	1,169	3,916	New Toronto	11,090	9,469	
Dutton	237	830	Niagara Falls	10,058	20,371	
East York Twp.	7,890	41,578	Niagara-on-the-Lake	802	1,764	
Elmira	1,210	2,069	North York Twp.	10,021	V.A.	
Elora	438	1,185	Norwich	384	1,301	
Embro	122	420	Oil Springs	157	541	
Erieau	68	281	Otterville	99	P.V.	
					</	



## MUNICIPAL LOADS, MAY, 1943

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Watford	349	1,023	Neustadt	43	431	Lakefield	306	1,301
Welland	11,935	14,899	Orangeville	680	2,558	Lanark	71	686
Wellesley	112	P.V.	Owen Sound	5,682	13,559	Lancaster	40	570
West Lorne	215	768	Paisley	119	730	Lindsay	3,608	8,345
Weston	4,703	6,165	Penetanguishene	933	4,177	Madoc	186	1,130
Wheatley	175	761	Port Carling	115	520	Marmora	108	1,004
Windsor	50,510	104,415	Port Elgin	421	1,415	Martintown	30	P.V.
Woodbridge	583	946	Port McNicoll	71	950	Maxville	87	811
Woodstock	8,462	12,339	Port Perry	301	1,175	Millbrook	83	749
Wyoming	60	538	Priceville	10	P.V.	Morrisburg	282	1,484
York Twp.	19,501	77,175	Ripley	79	420	Napanee	1,351	3,241
Zurich	133	P.V.	Rosseau	26	305	Newcastle	149	701
(25 and 66-2/3 Cycle)			Shelburne	266	1,053	Norwood	122	710
Hamilton	154,058	164,719	Southampton	500	1,467	Omeme	164	630
St. Catharines	28,908	32,559	Stayner	235	1,106	Orono	80	P.V.
Trafalgar Twp.	463	V.A.	Sunderland	67	P.V.	Oshawa	16,613	26,610
(66-2/3 Cycle)			Tara	99	510	Ottawa	35,003	150,861
Bronte	102	P.V.	Teeswater	102	873	Perth	1,674	4,197
Oakville	974	3,369	Thornton	26	P.V.	Peterborough	11,906	24,977

## GEORGIAN BAY SYSTEM

(60-Cycle)

Alliston	366	1,700
Arthur	129	1,089
Bala	109	355
Barrie	3,953	9,559
Beaverton	229	941
Beeton	130	617
Bradford	208	1,041
Brechin	45	P.V.

Cannington	161	761
Chatsworth	52	333
Chesley	473	1,812
Coldwater	101	545
Collingwood	2,345	6,249
Cookstown	76	P.V.
Creemore	139	661
Dundalk	225	686
Durham	337	1,874
Elmvale	153	P.V.
Elmwood	57	P.V.
Flesherton	49	452
Grand Valley	111	645
Gravenhurst	942	2,261
Hanover	1,374	3,190
Holstein	12	P.V.
Huntsville	1,013	2,943
Kincardine	631	2,483
Kirkfield	25	P.V.
Lucknow	298	856
Markdale	155	776
Meaford	554	2,759
Midland	4,660	6,764
Mildmay	115	764
Mount Forest	452	1,936

## EASTERN ONTARIO SYSTEM

(60-Cycle)

Alexandria	168	1,976
Apple Hill	39	P.V.
Arnprior	1,136	4,019
Athens	81	626
Bath	28	325
Belleville	7,350	15,498
Bloomfield	95	636
Bowmanville	2,474	3,850
Brighton	361	1,462
Brockville	4,528	10,576
Cardinal	284	1,602
Carleton Place	1,848	4,143
Chesterville	243	1,094
Cobden	77	643
Cobourg	2,324	5,907
Colborne	211	960
Deseronto	185	1,002
Finch	79	396
Frankford	148	1,095
Hastings	92	823
Havelock	105	1,103
Iroquois	204	1,123
Kemptville	331	1,230
Kingston	13,204	29,545

Lakefield	306	1,301
Lanark	71	686
Lancaster	40	570
Lindsay	3,608	8,345
Madoc	186	1,130
Marmora	108	1,004
Martintown	30	P.V.
Maxville	87	811
Millbrook	83	749
Morrisburg	282	1,484
Napanee	1,351	3,241
Newcastle	149	701
Norwood	122	710
Omeme	164	630
Orono	80	P.V.
Oshawa	16,613	26,610
Ottawa	35,003	150,861
Perth	1,674	4,197
Peterborough	11,906	24,977
Pictou	1,221	3,400
Port Hope	2,393	4,997
Prescott	1,426	3,283
Richmond	57	428
Russell	53	P.V.
Smith Falls	2,840	7,741
Stirling	287	947
Trenton	5,379	8,183
Tweed	231	1,181
Warkworth	60	P.V.
Wellington	174	948
Westport	76	725
Whitby	1,406	4,236
Williamsburg	83	P.V.
Winchester	292	1,017

## THUNDER BAY SYSTEM

(60-Cycle)

Fort William	14,002	30,370
Nipigon Twp.	158	V.A.
Port Arthur	20,300	24,217

NORTHERN ONTARIO  
PROPERTIES

## Nipissing District

(60-Cycle)

North Bay	4,231	16,013
-----------	-------	--------

## Patricia District

(60-Cycle)

Sioux Lookout	300	1,967
---------------	-----	-------

## Sudbury District

(60-Cycle)

Capreol	231	1,660
Sudbury	8,226	32,731





## **The LINE PATROL** *keeps Ontario's Power Flowing*

● Maintenance of Hydro transmission lines presents a tremendous challenge to the men whose job it is to keep Ontario's power flowing. For, in war or peace, the factory, the farm, and the home, depend upon an unflinching supply of electricity.

● During the winter, when deep snow blankets the province, line patrol and maintenance is particularly tough. In the north . . . when, at many times of the year, roads are impassable . . . line patrols of men and dogs, fight their way through the drifts . . . battling blizzard, ice and frost. In summer too, the patrol must continue. Where economically possible this is done by car or truck, but in many remote places it must be carried out on foot or by canoe. In fair weather or foul, the year around, Ontario looks to Hydro for power . . . and Hydro men see that they get it.

● From one end of the province to the other . . . from the great lakes to the wilderness of the far North . . . Hydro patrol men and crews of skilled linemen are on the alert, day and night, ready to meet the onslaughts of nature in the raw . . . ready to combat the havoc wrought by any storm. And . . . when disaster strikes . . . they stay on the job until the power is flowing again, so that Ontario's war-gear industries can keep running full-tilt, producing on round-the-clock schedules.

**ELECTRICITY is a  
WAR WEAPON  
*Save it!***

**THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO**



# HYDRO *News*



WABOOSE DAM





● Hydro-Electric energy, handmaiden of progress in peacetime, is indispensable in time of war!

In guarding laboratories all over Ontario, chemists are seeking out formulas for ever more powerful explosives to help shorten the war. The chemical industry and Hydro go hand in hand. Between them they produce explosives for aerial torpedoes, depth bombs, land and sea mines, chemicals for flame throwers—and many other weapons that will hit the enemy hard.

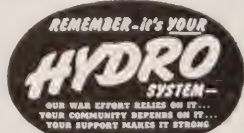
From the day that war was declared, Hydro's two million electrical horsepower was ready to be harnessed to the war effort and today more than half of it is at work, fashioning the myriad tools of victory. In Ontario's chemical industry, huge

plants using over 150,000 Hydro horsepower are turning out chemicals and high explosives—and more such plants are being built. That means greater demands for electrical energy, demands your Hydro must and will meet.

Here, every citizen can help by conserving Hydro current, by using it sparingly. That's an important way we can all "help to finish the job" . . . sooner!

#### CONSERVE ELECTRICITY

In cooking, use automatic controls and watch the switches. For large quantities of toast, use top oven element with broiling pan and rack instead of open elements. Cook complete "oven" meals in range oven, with bottom elements. Have your electrical dealer or local "Hydro" keep your appliances in first class order.



Buy more War Savings Certificates and urge others to do the same  
THE HYDRO ELECTRIC POWER COMMISSION OF ONTARIO





# HYDRO News

*formerly The BULLETIN*

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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The Front Cover



**M**IGHT and majesty both find expression in the spectacle of a massive dam, and water which rushes over sweeping sluiceways to roar into a turbulent torrent on the rocks below. When visiting Waboose recently, the Editor of Hydro News endeavoured to capture this impression through the lens of a camera. The result is reproduced on this month's front cover illustration entitled "Waboose Dam".

Volume 30

September 1943

Number 9

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## A LINK IN THE CHAIN

**T**HERE are many links in the chain of Hydro service which assures a dependable supply of low-cost power twenty-four hours a day for Ontario's domestic, commercial and industrial consumers.

One of the many vital links in this chain is to be found at Cameron Falls whose forty employees have a combined record of over 450 years' Hydro service to their credit. The activities of these employees and their families, and the surroundings in which they work and live form the subject of an article published in this issue of Hydro News.

The generating plants at Cameron Falls and Alexander Landing are the nerve centre of the Thunder Bay system which is under the able supervision of L. G. Dandeno who has been on the job in that area for over 20 years.

It is of more than ordinary interest to have an intimate glimpse into the lives of these people who, in a remote area of this province, have established a community whose spirit of service and enterprise cannot but command admiration and respect.

## DEMOCRACY IN ACTION

**M**ANY interesting facts were presented at the recent Owen Sound convention of the Georgian Bay Municipal Electric Association, not the least of which was the happy financial position in which the Georgian Bay system finds itself today. R. T. Jeffery, chief municipal engineer of the H.E.P.C., informed the gathering that out of the 59 municipalities comprising the system, there are only eight which have not already paid off all outstanding debentures or have not sufficient bonds and liquid assets to retire debt charges.

In attributing this progress fundamentally to good management, Mr. Jeffery extended his remarks to include all municipalities throughout the Province. He declared that Ontario should be proud of the high calibre of men who have come forward to serve "Hydro."

That such men have been motivated only by the highest ideals of citizenship and the spirit of service is readily apparent, as local

commissioners receive small salaries and, in some instances, serve entirely without remuneration. As Mr. Jeffery summed it up, "They do it because they like to do it and are proud to do it."

This kind of service is a fine example of democracy in action.

## THEN AND NOW

**A**S Prime Minister Winston Churchill stood, cigar in hand, viewing the might and majesty of the cascading waters of Niagara Falls recently, he told a reporter that he had first seen this historic landmark in 1900.

At that time he was a young man of 26. Behind him were Harrow and Sandhurst, the early days in the army and service in the Spanish American War. Before him lay the path of political destiny for in 1900 he was elected to "The Mother of Parliaments" as Conservative M.P. for Oldham. When he set foot on Canadian soil on this occasion, he came as Britain's "Man of the Hour" whose dynamic leadership and vivid, epigrammatic oratory have inspired all freedom-loving people.

While Scots maintain Churchill was destined to be a great leader because he was born on St. Andrew's Day, Canadians may insist that they, too, have a link with the British leader. They will point out, for example, that Fort Churchill was named after Lord Churchill, later the Duke of Marlborough, who was a distinguished ancestor of the present Prime Minister.

Whether or not, this Dominion has been an influence in the life of Churchill, one fact remains irrefutable. The far-reaching transition which has taken place in the life of the young man who visited Niagara Falls in 1900, has been paralleled by the transition in the economic and industrial life of Ontario. Hydro was but a dream in 1900. Today it is the industrial life-blood of the province in which there are 323 Hydro municipalities serving approximately 560,000 domestic consumers and 77,000 commercial consumers who are enjoying the benefits of low-cost power.

When Churchill, in the role of Britain's war leader, viewed "The Falls" this time he saw a mighty source of this power that is helping produce "the tools" for which he called during the dark days of this war.



# Ogoki Opening


A SMALL group of men stood on the top of Summit dam watching an eighteen-hundred pound stop log rise from one of the sluiceways. Slowly the electric winch brought the massive, 18-foot length of wood through the opening at the top of the dam.

At that moment, Otto Holden, chief hydraulic engineer of the H.E.P.C., stepped forward and smashed a bottle containing Niagara river water against the log. With an almost inaudible splash, the contents of the bottle mingled with the water below the dam.

And so with this simple but historic ceremony, enacted in the wild and lonely wilderness of Ontario's Northern hinterland, the first flow from the Ogoki diversion was released and started on its new course which will cover approximately 2,000 miles from the roaring Waboose rapids to the shores of the heaving Atlantic.

The group in attendance included W. B. Crombie, general superintendent of the project; David Forgan, construction engineer; J. A. Brodie, chief of the Forest Protection Division; and Peter Addison, district forester, Port Arthur.

Acclaimed as one of the Commission's outstanding achievements and an undertaking which is recognized as



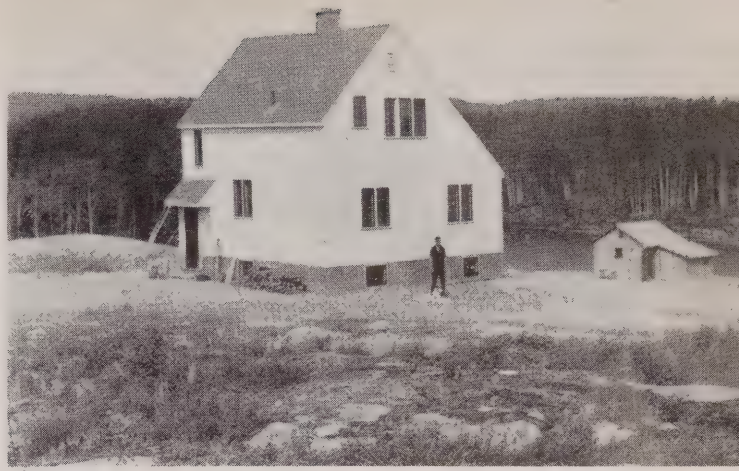
Otto Holden, chief hydraulic engineer, H.E.P.C., points out a feature of interest to W. B. Crombie, superintendent of the Ogoki diversion construction (centre), and David Forgan, the Commission's construction engineer.

The illustration at the top of the page shows the main dam at Waboose rapids where the Ogoki river fills the air with fine spray as it boils over the rocks.





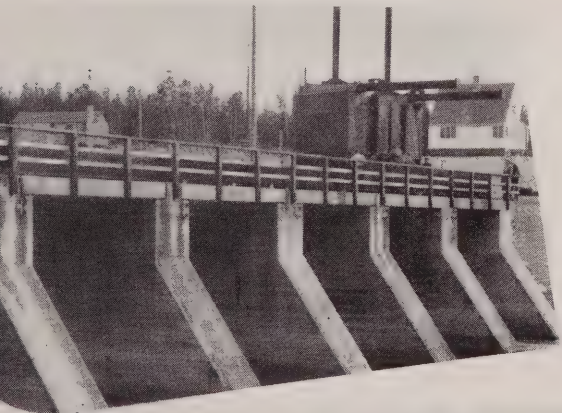
Declaring the Ogoki diversion open, Otto Holden, Hydro's chief hydraulic engineer, smashes a bottle containing Niagara river water against a stop log at Summit control dam.



Houses for the operators have been constructed at both Summit and Waboose dams. One of these homes is shown above.



Here is another view of Waboose main dam. One of the transport planes had just taken off for the base at Ombabika bay.



unique in the annals of engineering, the five-million dollar Ogoki diversion was commenced in December, 1940. Its completion will result in the moving of a great body of water from one watershed through a height of land to another watershed. It means that part of the Ogoki river water, which formerly rolled into the Albany and James Bay in a northeasterly direction, has been "detoured".

Changing the water level contours within a 300 mile area in this remote section of Northern Ontario, the diverted water is now following a southeasterly course. Between Waboose and the ocean this water flows through rippling chains of creeks, rivers and lakes including Lake Nipigon, the Nipigon river, the Great Lakes and the St. Lawrence.

#### Will Benefit Navigation

The Ogoki water and the flow from the Long Lac diversion—a similar but smaller project 120 miles to the east—unite in Lake Superior. These two diversions, whose combined flow averages 5,000 cubic feet per second, make possible the development of 360,000 additional horsepower at developed and undeveloped sites between Lake Nipigon and the mouth of the St. Lawrence.

Over a period of time this diverted water will raise the levels of the lower Great Lakes about  $2\frac{1}{4}$  inches and thus

Here is the control dam which spans the channel cut through the height of land between North and South Summit lakes.

This is the new railway bridge which has been erected at Jackfish crossing where the channel has been enlarged to take care of the increased flow of water.

Planes were used to transport passengers and freight between the key points of the Ogoki diversion. The illustration below shows the plane at Summit where the control dam is located.







The gentleman striding along with the surveying equipment is Mukwa, one of Hydro's Indian employees at the Ogoki. In case you want to be formal his proper name is Mr. Isadore Patabon.

benefit navigation. This benefit arises from the fact that the capacity of lake freighters is determined by the depth of shallow channels, some of which provide only a few inches clearance for the hulls of these boats. A higher water level will, therefore, eventually contribute to an increase in the tonnage which can be carried by these freighters in their many journeys over a period of a year.

Three of the key points involved in the creation of the Ogoki project are Waboose Rapids, where a massive main dam 50 feet high and 1,700 feet long has been thrown across the Ogoki river; South Summit Lake, at the height of land, where the control dam now stands; and Jackfish Crossing at which point a new railway bridge has been erected over a deepened channel that is designed to take care of the increased flow of water. To close low points in the contour, two auxiliary dams have been constructed adjacent to the main Waboose dam.

These works, combined with other auxiliary dams at Chappais Lake and Snake creek, which flows into Mojikit creek from the west, will create a reservoir extending upstream to the west a distance of 30 miles and to the south into Mojikit Lake. The total area of this reservoir or new lake will be 120 square miles of which 78 square miles only will be newly flooded land. The raised water level will

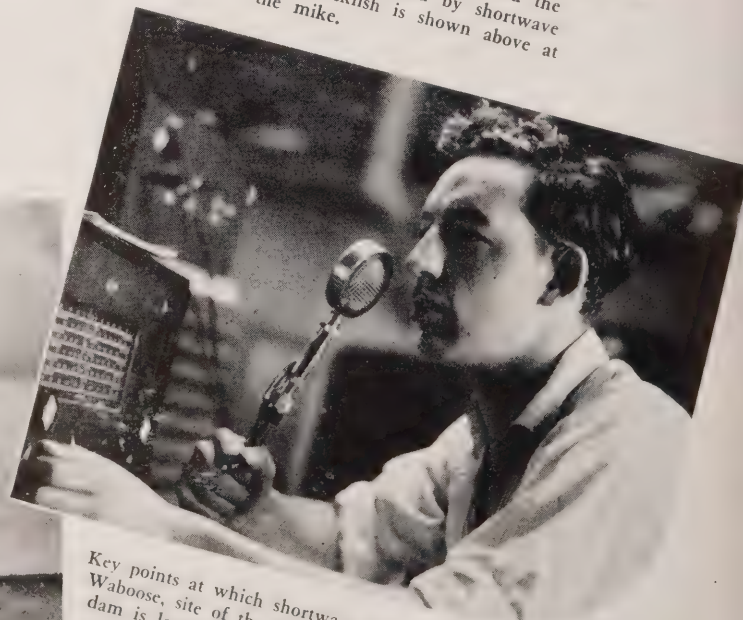
Immediately north of the Ogoki and Albany rivers are a few lonely outposts of civilization. This illustration shows one of the Hudson's Bay Company stores at Fort Hope.



Caterpillar tractors played an important role in Ogoki construction operations. They were used extensively in moving freight over winter roads and in hauling loads of rockfill as shown above.



Daily communication between construction camps and the H.E.P.C. office in Toronto was maintained by shortwave radio. The radio operator at Jackfish is shown above at the mike.



Key points at which shortwave radio was installed included Waboose, site of the main dam, Summit, where the control dam is located, and Jackfish. This is one of the operators at Summit.



then extend southerly from Mojikit into a small lake known as North Summit Lake where a channel has been cut through the height of land to permit the flow to pass into South Summit Lake. These channel improvements, at this point, involve the construction of a dam and control works which are designed to pass a maximum of 10,000 cubic feet of water per second. From South Summit Lake, the water flows through a series of small lakes into the Jackfish river and thence into Lake Nipigon, down the Nipigon river and eventually into the Great Lakes.

#### Supervision by Radio

Houses have been constructed at both Waboose and Summit where permanent operators are stationed. Control and supervision of all operations involved in regulating the flow from this new diversion are maintained through a shortwave radio system which links the head office administration building in Toronto with operators at Summit and Waboose.

It is interesting to note that the Ogoki diversion will make possible the development of 90,000 horsepower at developed and undeveloped sites on the Nipigon river. At the same time, on the Aguasabon river down which the Long Lake diversion flows to Lake Superior, there is a possibility of developing 20,000 horsepower with a diversion flow of 1,000 cubic feet of water per second.

Averaging 5,000 cubic feet per second, the combined flows from the Ogoki and Long Lake can be utilized to develop 10,000 horsepower at Sault Ste. Marie, a maximum of 150,000 on the Niagara river, 40,000 on the St. Lawrence river in Ontario, and 50,000 on the St. Lawrence in Quebec,

or a grand total of 360,000 horsepower for the two diversions.

These facts serve to emphasize the far reaching benefits which will be derived eventually as a result of the tremendous undertaking which has been carried out.

#### Headquarters at Ferland

It was in the winter of 1940 when actual construction work commenced. The keen-edged axe of the lumberjack quickly made a clearing in the bush at Ferland where base headquarters were established. In all, approximately 80 miles of roads were built within the Ogoki area to facilitate the movement of equipment and more than 20,000 tons of different kinds of materials which had to be brought from outside. Of that total more than 800 tons were foodstuffs alone.

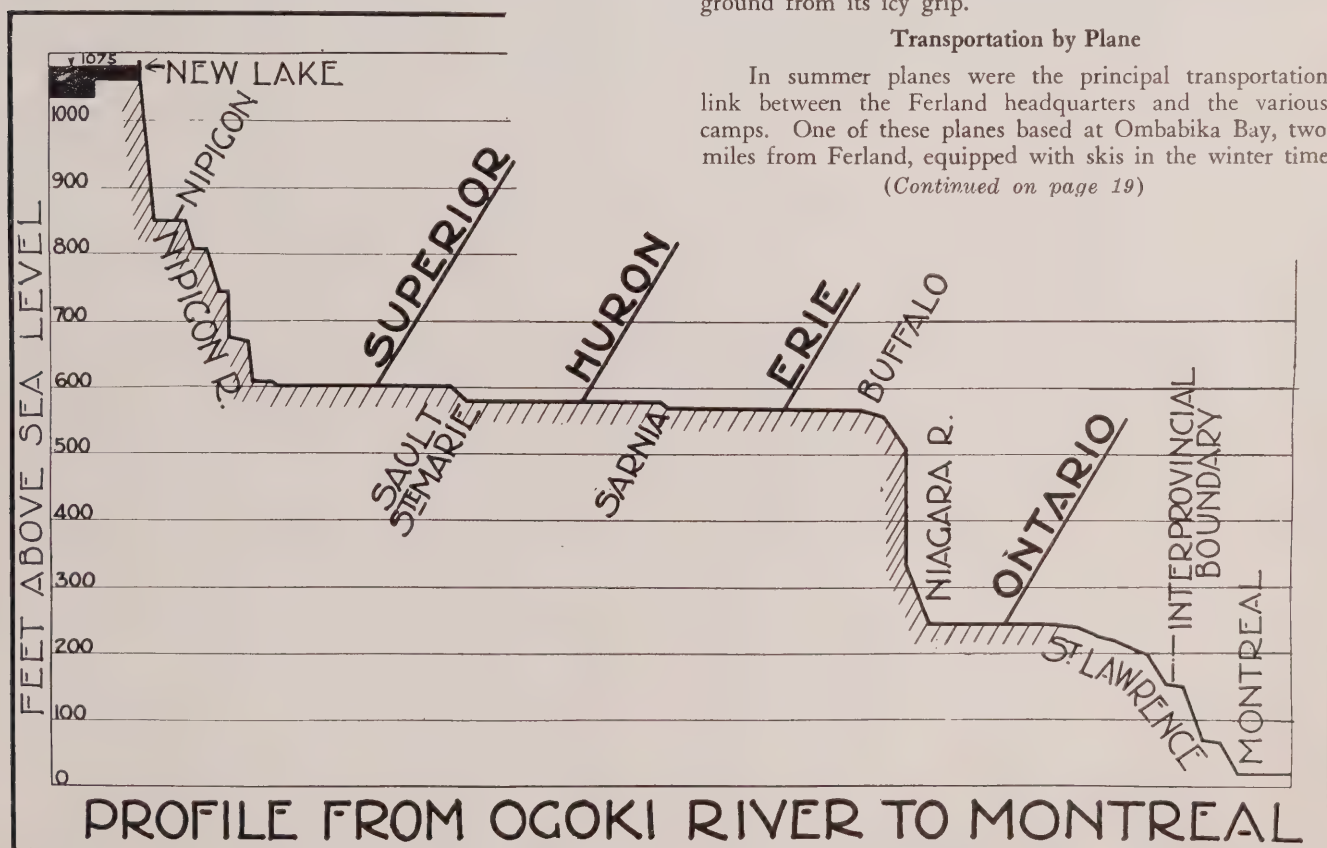
Where sand and gravel for the mixing plants had to be trucked, or excavated rock or earth moved from the shovels, short stretches of good gravel road were built. The main winter roads, however, were simply clearings through the forest surfaced with hard-packed snow and ice. Thus cold weather provided smooth-surfaced highways over which heavy sleigh trains could be hauled. When spring came, however, these roads reverted to the forest primeval and became impassible swamp or rocky, stump-studded bush. By using this winter type road many thousands of dollars in construction costs were saved as well as a great deal of valuable time.

With the use of tractors, pulling long strings of freight-carrying sleighs, most of the material and equipment was brought in during the long winter months ready to commence operations in the spring when the frost released the ground from its icy grip.

#### Transportation by Plane

In summer planes were the principal transportation link between the Ferland headquarters and the various camps. One of these planes based at Ombabika Bay, two miles from Ferland, equipped with skis in the winter time

(Continued on page 19)





Nature had the assistance of man in fashioning this waterfall (centre), which is an arresting feature at Hydro's Alexander Landing plant.



## Hydro Community at CAMERON FALLS



These trim, attractive, Hydro homes (upper left), are occupied by Hydro employees at Cameron Falls.

Every day this horse and cart (upper right), make the rounds at Cameron Falls where a Hydro employee delivers the milk.

These Hydro folk have something to boast about when it comes to gardens. Some are shown above at work.

As the above illustration shows, the Cameron Falls folk are also playing their part in growing vegetables for victory.

CAMERON FALLS has something more than the wild, rugged beauty associated with Ontario's far-flung northern hinterland where black, cool waters dance and tumble through an interlacing maze of colourful woodland.

Although many miles from the noisy hustle and bustle of populated centres, Cameron Falls has a generating plant and a self-contained Hydro community in which Hydro employees work, dwell and play.

In this community, the visitor meets 40 of these employees whose combined service with Hydro in this remote area totals approximately 450 years. Ten have been at Cameron Falls for over 15 years and 27 have served over 10 years.

These employees along with their wives and families number about 150.

In such a settlement one might expect to find log cabins or cottages with limited amenities and conveniences. The Hydro community at Cameron Falls is nothing like that. It is a trim, well-planned and inviting area of more than

30 up-to-date frame and stucco homes, whose tenants enjoy all the conveniences and public services of city dwellers.

### Daily Milk Delivery

It is a place where hot and cold water are available at the turn of a modern tap; where the housewife cooks on an electric range, stores food in an up-to-date electric refrigerator and washes clothes in an electric washer; where hubby makes the hardwood floors shine, stokes the furnace and tends his victory and flower gardens.

At Cameron Falls you'll also find the Hydro store and post office where smiling John Sutherland makes up orders of groceries, meat, toilet and other articles and exchanges witty repartee with his customers. When it is necessary to make deliveries, the horse and waggon, which are used in delivering milk every morning, make the rounds at certain times.

There's also a school at Cameron Falls and, as the children will tell you, "two swell teachers." Yes, they have a "school board". The members are W. M. Foster, chair-



man, and R. G. Whitehead, who are both operators, and J. P. Maley, a mechanic.

When there are "big doings" or a dance in the settlement, all paths lead to the community hall. This hall is also used as a place of worship, services being conducted every few weeks by a visiting minister or priest.

Right in the centre of the community—in what might be called "The Square"—is a large, well-equipped staff house which was erected in 1925. Inside, the visitor will discover shining hardwood floors, spic and span appointments, comfortable bedrooms, a large dining room, a lounge room, billiard room and two guest rooms. He will also find a homelike atmosphere in which Mr. and Mrs. James E. Arnold, cook and housekeeper respectively, spread good food and good cheer.

#### Recreational Facilities

The homes which are occupied by the employees and their families are modern, spacious and well-planned and are comparable to many up-to-date city homes. The trim, attractive flower gardens reflect the keen interest which the employees take in horticulture, while the community is also playing its full part in growing vegetables for victory.

Recreational facilities include a fine tennis court and an area for horse shoe pitching, while there's no "better 'ole" for swimming than the Fraser creek, which is more like a river.

There are many other interesting facts about this community. For instance coal is brought in by the carload and purchased at cost by the employees who may also purchase or cut their own wood. Power and equipment is provided for sawing the wood and a nominal charge is made for hauling.

The community is organized and equipped to fight any outbreak of fire. In each of the eight boxes spotted throughout the compact settlement are a hydrant and hose of sufficient length to cover the houses in the section. W. J. Malcolm, utility foreman, is the fire chief, and Arthur Stanzell is the assistant fire chief.

A PBX dial telephone system assures communication between all sections of the generating plant and the homes of the key employees, while there is also a telephone line which links the community with Port Arthur.

L. G. Dandeno, superintendent of Hydro's Thunder Bay System, is mayor, chief of police, war campaign organizer and counsellor for the community. "The area," he told Hydro News, "is entirely free from crime."

He pointed out that Cameron Falls is actually unorganized territory and is under provincial police protection.

#### Took Root 23 Years Ago

A native of Waterloo County, Mr. Dandeno has been stationed at Cameron Falls for 20 years. He retains interesting memories of his early school days at Hespeler and Galt,

his course at Toronto Normal School, the time he taught school and the years he spent at the University of Toronto where he graduated in electrical engineering. His eyes light up and twinkle when he finally admits that he did play professional lacrosse as a young man. His hobbies now are gardening, boating, reading and "fixing things round the house".

Mr. Dandeno has one son, who is in the navy, and three daughters.

The Hydro community over which he presides first took root some 23 years ago with the completion of the Cameron Falls generating plant, a mighty and imposing structure on the Nipigon river. Mr. Dandeno recalls that when he went to this plant in 1923, it had two generators, a total capacity of 25,000 horsepower and one transmission line to Port Arthur. Today there are six generators in operation with a total capacity of 75,000 horsepower. In 1930, the nearby Alexander Landing plant was placed in service. Operated by remote control from Cameron Falls, this plant has three generators with a combined capacity of 54,000 horsepower. The Thunder Bay system served by these two developments embraces Port Arthur, Fort William and surrounding farming communities as well as Nipigon township and the Beardmore and Geraldton mining areas. When the line from Port Arthur to Steep Rock is completed, 325 miles of 110 kv. transmission line will be in service in the Thunder Bay system.

#### Pioneer Employee

The Cameron Falls plant, Mr. Dandeno stated, was placed in service on December 20, 1920, and the first four homes were ready for the first families to move in by the summer of the following year.

A man who can claim the distinction of being a pioneer of the community and who is the oldest employee in point of service still on the job at Cameron Falls is C. B. Montgomery, the chief operator, who went there on October 6, 1920.

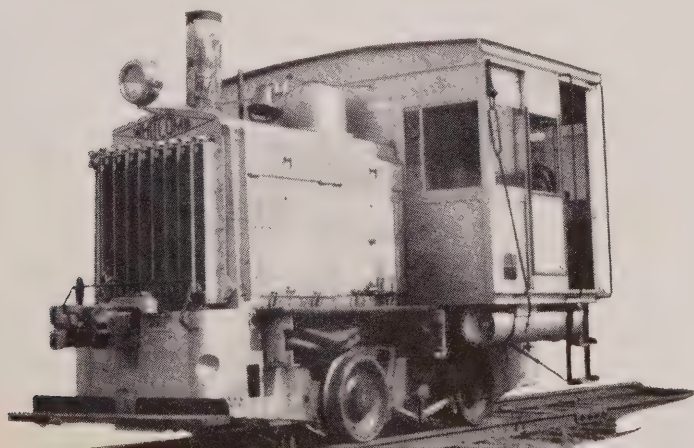
A native of Cardinal Ontario, Mr. Montgomery started with the Ontario Power Company in 1910, while his service with Hydro now totals 26 years. One of his two daughters was born after he went to Cameron Falls.

Other key employees at Cameron Falls include H. D. Booker, electrical maintenance supervisor for the Thunder Bay system; H. J. Pettersen, mechanical maintenance supervisor; G. V. Knisley, line maintenance supervisor; W. J. Malcolm, utility foreman; E. B. Coggin, chief clerk; and L. G. Edwards, chief operator at the Alexander Landing plant.

This Hydro community also has a broadcasting station which stands at the top of one of the slopes overlooking "The Square". It's not listed on any of the networks, however, for it serves only for shortwave communication between Cameron Falls, Toronto, Long Lac and key points in the Ogoki diversion area. The operator is W. J. Skrynski, who transmits and receives messages daily.

For a good many years Cameron Falls was more or less isolated, Mr. Dandeno told Hydro News. He stated that it was in 1927, the first automobile appeared in the community—a 1925 Chevrolet, driven by the late Wally Watts, a mechanic, who died three years ago. At that time there was only a very tortuous road leading into Cameron Falls, but in 1929 the present highway was built and it is now possible to drive to Port Arthur in about two hours.

Hydro's own railway line links Cameron Falls with the stop on the C.N.R. line and the plant at Alexander  
(Continued on page 19)



Quaint but efficient, this is the "locomotive" which pulls freight between Cameron Falls and the railway stop on the main line.



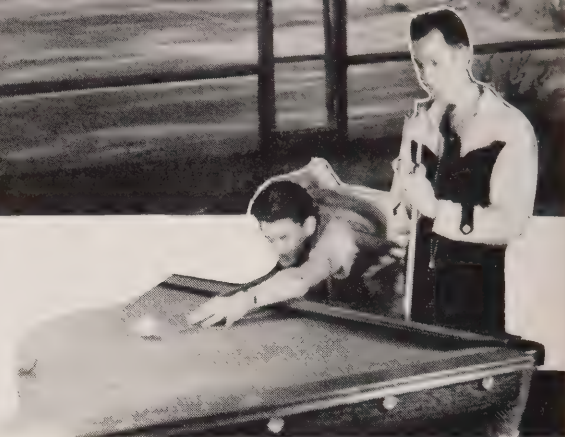


When the photographer called at the home of L. G. Dandeno he found the superintendent of the Thunder Bay system doing a little spraying in his garden.



Yes, they've got a tennis court in the Hydro community at Cameron Falls. A set was in progress when the photographer came along.

In the basement of the club house is a recreation room which is equipped with a billiard table. These boys were not camera shy.



School's out! Some of the children enjoy a session of fun and games outside the school at Cameron Falls. There are approximately 30 students.



A focal point in the Cameron Falls community is the Hydro store and post office, shown above. Yes, they deliver! By horse and cart!



And here's John Sutherland who operates the Hydro store. He handles groceries, meats, patent medicines, toilet goods and other articles.



When there are big doings in the community these events take place in the community hall which is shown above.



If you're interested in what's cooking, Mr. and Mrs. Arnold (above), are the authorities on the subject.

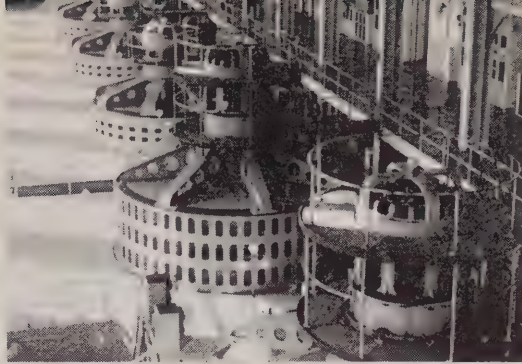


Good cooking and a home-like, friendly atmosphere combine to make the club house dining room a very inviting place to visit at meal times.

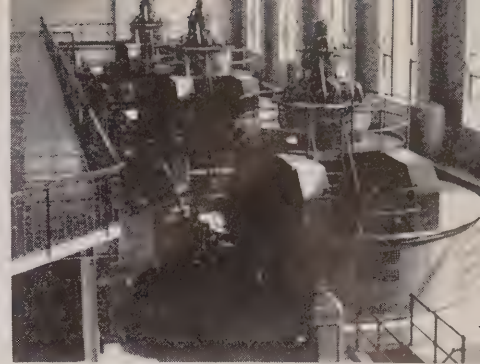




This is the H.E.P.C. Cameron Falls plant from the tailrace side. Inside are six generators, with a capacity of 73,500 horsepower.



If the visitor to Cameron Falls plant were to climb up on the travelling crane this is the view he would have of the generators.



The three generators shown above are located in the Commission's Alexander Landing plant which is operated by remote control from Cameron Falls.



V. J. Skrynski, radio operator at Cameron Falls, was talking to Toronto over Hydro's shortwave radio system when the photographer arrived.



Here is C. B. Montgomery, chief operator, and the employee with the longest record of service at Cameron Falls. He went there on Oct. 6, 1920.



Above are three of the four Cameron Falls Quarter Century Club members: C. B. Montgomery, L. G. Dandeno and G. V. Knisley. L. G. Edwards was on vacation.



Meet some of the Hydro folk who work and live at Cameron Falls. There are 33 homes in the community and a population of 150.



Ten employees have been at Cameron Falls for over 15 years and 27 have served over 10 years. Shown above is a group of "veterans."





In this group, from left to right, are R. D. Boyes, Alliston; Mayor W. G. Case, Owen Sound; R. T. Jeffery, Toronto; Mayor W. S. Beaton, Sudbury; C. J. Halliday, Chesley, and Herman Denef, Hanover.



Something had captured the attention of this head table trio when the photographer turned the camera in their direction. They are, from left to right, C. F. Hewitt, Kincardine; John McQuaker, Owen Sound, and D. L. Regimbal, North Bay.



## Municipalities Advised To Build Up Reserves

**Prepare For Time When War Loads Drop Off,  
Urges R. T. Jeffery When Addressing Annual  
Convention Of Georgian Bay Municipal  
Electric Association — Resolution  
Seeks Municipal Representa-  
tion on H.E.P.C.**

**B**Y building up reserves now Hydro municipalities can prepare for the time when war loads drop off and thus avert the necessity of increasing rates in the post-war period.

This advice was given by R. T. Jeffery, chief municipal engineer of The Hydro-Electric Power Commission of Ontario, when addressing delegates to the Georgian Bay Municipal Electric Association's annual convention at Owen Sound on August 6.

A highlight of the business session was a discussion on the question of municipal representation on the Commission. The resolution, unanimously endorsed, sought the right to name one of the commissioners "who will not be subject to dismissal by any government but only by the municipalities" and was passed along to the O.M.E.A. executive for action.

With R. D. Boyes, president of District No. 2, in the chair, delegates from all parts of the system met in the town hall for the afternoon business session, while the banquet in the evening was held in the Paterson House.

Both Mr. Jeffery and Mayor W. G. Case of Owen Sound, accentuated the all-important contribution Hydro is making to the winning of the war and the equally important role it will be called upon to play in the post-war period. At the same time, Kenneth A. Christie, K.C., president of the O.M.E.A., described Hydro as an example to the rest of the world of an efficiently operated public ownership enterprise which is free from political control.

### Officers Are Elected

During the business session many fine tributes were paid to the outstanding service which has been rendered by Herman Denef of Hanover, who has been secretary of the Georgian Bay Association for the past eleven years.

Before the close of the business session the following officers were re-elected for the ensuing year: hon. president, Alfred Menary, Grand Valley; president, R. D. Boyes,

The two gentlemen who are deeply engrossed are R. D. Boyes of Alliston, the president of Georgian Bay Municipal Electric Association, and Herman Denef, Hanover, who has been secretary of that association for eleven years.





Here we find, from left to right, W. Dixon, Arthur; H. O. Hawke, Galt; J. R. Beaulieu, Penetang; Miss Kathleen Ciceri, Guelph, secretary of the O.M.E.A.; Kenneth A. Christie, Toronto, president of the O.M.E.A.; and R. D. Boyes, Alliston, president of District No. 2.



In this group are W. Dixon Arthur; J. R. Beaulieu, Penetang; R. Gauthier, Penetang; E. G. Gurnett, H.E.P.C., Toronto; S. W. Sarjeant, Orillia; L. G. McNeice, Orillia; A. W. Murdock, H.E.P.C., Toronto; W. Clark, Kincardine; M. McDonald, Kincardine; E. M. Soden, Huntsville; A. H. Huffman, Orillia; and C. F. Hewitt, Kincardine.



A programme of entertainment was in full swing when the cameraman got this general group picture of delegates and their wives. The banquet was held in the Paterson House at Owen Sound following the business session in the town hall.



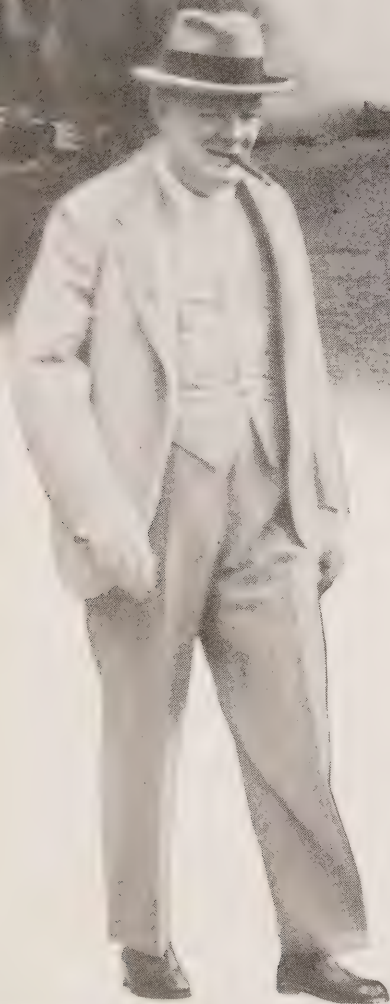
A community sing-song was in progress when this shot was taken. The members of the "chorus" are, from left to right, Mark Dilmadge, Owen Sound; T. C. James, Toronto; L. G. McNeice, Orillia, Earl Radburn, Warden of Grev County; W. Dixon, Arthur; and H. O. Hawke, Galt.



Had Hitler attended the banquet of the Georgian Bay Municipal Electric Association he would have been quite annoyed and embarrassed if he had heard the rousing vocal work of W. A. Kramer, Mildmay, and Albert Rahn of Neustadt, (above), in "There'll Always Be An England"



# CHURCHILL *at* NIAGARA FALLS



THEY SAW SOMETHING MORE than the "Eighth Wonder of the World" in that brief but historic visit to "The Falls". Actually, Winston Churchill, Britain's fighting Prime Minister, and his daughter, Mary, saw in Niagara's cascading waters a mighty source of Hydro power which is speeding the output of "tools to finish the job".

Just fifteen minutes before the distinguished party arrived on the scene, a little bird whispered in the ear of Edwin H. Hodge, the Commission's photographer at Niagara Falls. Grabbing his camera and racing to the best vantage point, Mr. Hodge made the interesting pictures reproduced on this page. The two upper illustrations provide a symbolic impression of the meeting of two dynamic forces in the fight for world freedom—the British Prime Minister and Niagara Falls. With Churchill and his daughter in the foreground of the centre reproduction is Maxim T. Gray, manager of the Niagara Parks Commission. In the lower illustration "Winnie" stops to light one of his famous cigars while Major-General C. F. Constantine, officer commanding Military District No. 2, looks on.







**W**ORK must go on! If you have been successful in growing an abundant crop of Victory Garden produce, make an equally good job of storing the roots and tubers for winter use.



Edithemmu Muir

Many vegetables and fruits may be preserved in their natural state, without canning or dehydrating. To do this, properly constructed storage space is necessary. A storage room must be cool, well ventilated and dark. Two favourite methods are: (1) the use of a cold room in the basement, and (2) storage pits made outdoors.

A portion of the basement of any home may be adapted for the storing of vegetables. This space should be selected in that portion of the basement which provides a window leading directly to the outside. Make a chute to cover one-half the window, extending it to within 8 inches of the floor. This will permit the intake of fresh air and allow the escape of stale air. The window should be shaded; whitewashing would accomplish this.

The partitions dividing the storeroom from the rest of the basement should be sheathed with lumber on both sides of 2 x 4 studding. Good insulation is obtained by filling the partition space between the boards with sawdust, mill shavings or peat. Professor Truscott, O.A.C., recom-

These sketches, drawn by Ken Brown of the Commission staff, direct attention to the indoor and outdoor storage facilities discussed by the Hydro Home Economist this month.

mends tacking building paper on to the studding before the inside sheathing is put on, to keep the insulation material dry. A well made, close-fitting door is essential to keep out warm air which may come from the basement. If the floor is concrete, put on a layer of sand or peat moss and keep it damp, sprinkling with water every few days to maintain the moisture content of the air. Whitewash used on the walls and ceiling makes for a sanitary room. The last but most important detail is to purchase a good thermometer and hang it near the cold air intake.

The containers for vegetables should be constructed against the outer wall where cooler conditions exist, and these containers should have slatted sides if possible, to provide ventilation. Bags of potatoes or apples should be placed on a false floor (raised boards). Packages of dried peas, beans, corn, onions, pickles and other vegetables can be placed on shelves.

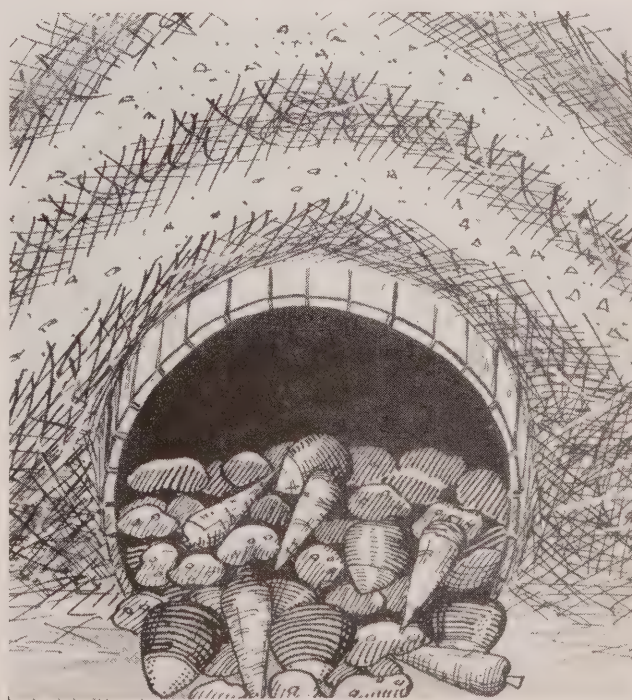
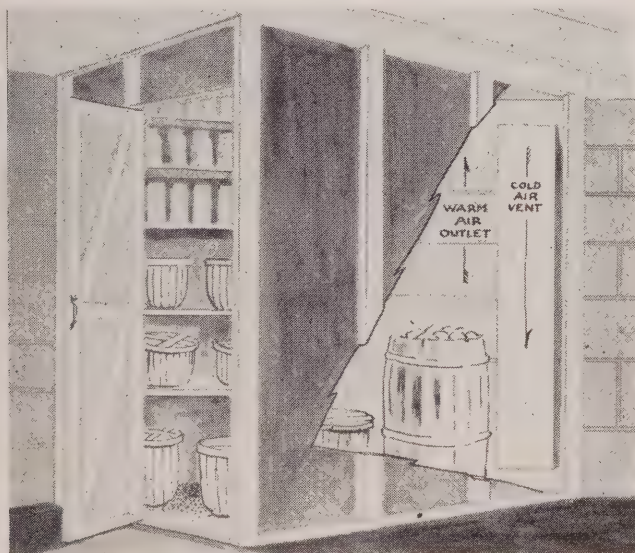
### Cull the Vegetables and Fruit

All fruit and vegetables selected for winter storage should be fully matured and free from rot, blight or injury to the skin. The specimens should be taken into storage with little earth on and when dry. Wet produce induces decay.

Potatoes are best placed in a dark portion of the room, as light adversely affects the quality. These tubers are best stored in crates, but when placed in piles against outside wall, place boards or slats along wall. Do not pile higher than 5 feet, erecting an upright ventilator in the centre—made by nailing three 6-inch boards together to form a triangle. Holes bored along these boards before being placed together will aid air circulation, as insufficient ventilation tends to cause button rot or black-heart. A temperature of 36 to 40° F. will prevent sprouting, withering or freezing.

Late cabbage or cauliflower may be stored until January or February. Lift each plant with root attached and put close together, root down into a box of sand. Place a layer

(Continued on page 18)





# Around the Hydro Circuit

## MANAGER AT KITCHENER

OSCAR C. THAL, general manager of the Kitchener Public Utilities Commission, has had wide experience in



Hydro having been with the Kitchener commission for the past 31 years. Joining the staff as a clerk while Hydro was in its infancy, he has grown with the utility becoming in turn purchasing agent, assistant manager and, in 1940, general manager. He is a devotee of the roaring game and is also a hunter and fisherman. He can tell some good stories about his experiences while hunting and fishing in the northern sections of the province.

## CHAIRMAN AT KITCHENER

HARVEY J. GRABER has been chairman of the



Kitchener Public Utilities Commission for the past six years. Born and educated in Kitchener, he has served on the commission for seven years and has rendered noteworthy public service on other bodies. He was on the Kitchener Public School Board for ten years, and also served on the public library board for three years. Mr. Graber is a director of the Retail Coal Dealers' Association of Ontario. His hobbies are horticulture and community affairs.

## VICE-CHAIRMAN AT KITCHENER

EDWARD E. RATZ is vice-chairman of the Kitchener



commission. A former school teacher, he is now a funeral director in Kitchener, and has been a member of the commission for the past eight years. He served on the city council for 12 years during which time he was mayor for two years. Always interested in the welfare of the community he served for some time as chairman of the Kitchener-Waterloo Hospital Board. His special interests are travelling and fishing.

## SERVING FOURTH TERM

JOSEPH MEINZINGER, who is now serving his



fourth term as mayor, embarked upon an industrial career when a young man. He quickly revealed the ambition and enterprise which have been reflected in the character of his service in civic and Hydro circles. In sports he also packs a punch, having conducted a boxing school over a period of 20 years. Mr. Meinzinger is keenly interested in the youth of the country and also in the labour movement.

## COMMISSIONER

Widely known among the citizens of Kitchener, GEORGE W. GORDON, became a member of the Public Utilities Commission last year.



After having served this historic city for ten years as an alderman, Mr. Gordon, was elected to the highest civic office, having occupied the mayor's chair during the years of 1938 and 1939. A man of many interests, his principal hobby is municipal affairs, while he is a devotee of the Royal and Ancient Game and also enjoys lawn bowling.

## NEW COMMISSIONER

A new face on the Kitchener Public Utilities Commission is ARMIN M. BITZER, who was elected this year.

He has served with the Canadian Engineers, the Royal Garrison Artillery and holds a commissioned rank. A graduate of Toronto University School of Practical Science, he holds membership in the Association of Professional Engineers. He takes a keen interest in sports, particularly tennis and bowling.



## DIES SUDDENLY

HENRY O. WEICHEL, aged 57 years, chairman, Elmira Public Utilities Commission, passed away suddenly at his home in Elmira recently.

Born in Elmira, he was the son of the late Michael Weichel and Catherine Schmidt, pioneer residents of the community. After receiving his education at Elmira and Kitchener schools, he took a position with the Traders Bank and was located in Alberta for several years.

Thirty years ago Mr. Weichel returned to Elmira to become associated with his father in an old established hardware firm and later became manager.

He had been connected with Hydro for more than twenty years, during which time he served as commissioner and chairman.

"Big Mike," as he was popularly known among his friends, was an ardent sportsman, being particularly interested in curling. He was a life-long member of St. Paul's Lutheran Church and treasurer for 29 years.

Surviving are his widow Clara Weichel; two sons, Pte. Harold and Pte. Arthur; two daughters, Marjorie and Ruth; two brothers, John S. and W. G. Weichel; and two sisters, Mrs. Ida Heimbecker and Mrs. Oscar Ruppel.





# Around the Hydro Circuit

## GEORGE E. LAING DIES

Stricken with a heart attack at his home in Toronto, **GEORGE EDWARD LAING**, who was with the Toronto Hydro-Electric System for the past 30 years, died suddenly. Mr. Laing, who was in his 55th year, was in the station construction department. He is survived by a son, Ralph, with the R.C.A.F., and a daughter Marguerite, both of Toronto. Another son, Norman, was killed in action about a year ago when serving with the R.C.A.F., while his wife died eleven years ago.

**FLYING OFFICER R. G. CARTER**, formerly of the H.E.P.C. property department and now with the R.C.A.F., was recently awarded the D.F.C., after taking part in many raids over enemy territory. The citation reads in part as follows:

"As navigator this officer has taken part in many successful raids on Germany, Italy and occupied territory. He was a member of the crew of an aircraft which participated in an attack on the radio location factory, Friedrichshaven, and the raid on Spezia during the round flight via Africa. He has invariably displayed outstanding courage and determination."

F.O. Carter joined the H.E.P.C. staff in 1939, leaving to enlist in the armed forces in 1940.

**LEADING SEAMAN L. STANLEY HEYWOOD**, formerly a member of the H.E.P.C. accounting department, has been awarded the D.S.M., for heroic action while a member of the crew of H.M.C.S. Regina in the Mediterranean Sea. This ship recently sank an Italian submarine and captured a number of its crew.

## C. J. HALLIDAY'S SON IN NAVY

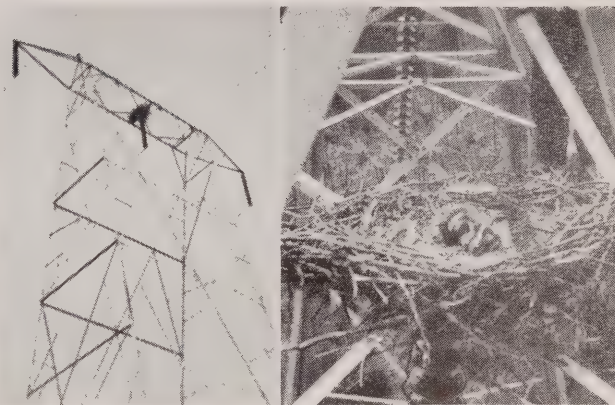
C. J. Halliday, the popular chairman of the Chesley public Utilities Commission, received the happy tidings recently that his son, Jack, has graduated from a special officers' training course at Cornwallis, Halifax. Jack enlisted with the RCNVR upon completing his B.Sc., course at Queen's University, Kingston. Another of Mr. Halliday's sons, Duncan, a graduate of the University of Toronto, is feature and photograph editor of *The Globe and Mail*, Toronto.

## A.M.E.U. FALL CONFERENCE

A fall conference of the Accounting and Office Administration Committee for Western Ontario Division, A.M.E.U., will be held in the Hotel London, London, on Tuesday, October 19.

The agenda, prepared at a planning meeting recently, provides for a discussion of accounting and administration problems as well as an address and questionnaire on the pension fund, Hydro News was informed by J. F. Cook, the secretary of the Division.

## Patrolman Gets The Birds



**T**HIS is the story of a patrolman who got the bird—in fact two of them. And this is how it happened.

While patrolling the line in the vicinity of Bannockburn, Harry Tate discovered the nest shown above (left) interwoven with the steel tower and, upon investigation, discovered the two young eagles (right).

The mother, it is reported, took flight and Mr. Tate has had to step into the breach. The birds, weighing approximately 4½ pounds, were removed to the patrolman's cottage where they are being taken care of until they can look after themselves. Meanwhile the patrolman's daughter, Helen, is being kept busy catching fish for the young eagles.

Ornithologists have evinced keen interest in the discovery. They have compiled as much data as possible to establish the fact that the young birds are bona fide members of the eagle family.

The nest in which the birds were found had an outer diameter of approximately 8 feet, while the diameter of the main nest was 5 feet. Built over 70 feet from the ground, it was discovered on July 25. Bannockburn, where the discovery was made, is in the vicinity of Tweed.

## KILLED IN SICILY

A memorial service for Pte. Calvin Kinnear, of Monkland, formerly of the H.E.P.C., construction department, killed in action in Sicily on July 23, 1943, was held in St. Andrew's Presbyterian Church, Avonmore, recently.

Pte. Kinnear, a native of Monkland, Ontario, was born in April, 1913, and was a son of the late Mr. and Mrs. Joseph Kinnear. He left the employ of the H.E.P.C. to enlist in the Royal Canadian Corps of Signals at Kingston and in the early fall of 1942. After training at Cornwall and Brockville he arrived "somewhere in England" in March, 1943.

Surviving are three brothers and two sisters: Austin and Clifford at home in Monkland; Stanley, Carleton Place; Mrs. Harry Skuce (Edith), Ottawa; and Mrs. Thomas Elliott (Mabel), Smiths Falls.

## HYDRO HOME FORUM

*(Continued from page 15)*

of clean leaves over the top and cover with sand. Occasionally sprinkle water on sand.

Onions have to be dry before storing on shelves or in small open crates. The tops should be cut 1 or 2 inches from the bulb and left to shrivel in a warm place out of the wind and sun. During storage remove any onion refuse from the shelves.

The attic or cellar stairway usually has the best temperature, 50 to 65° F. to accommodate squash and pumpkin which should also be stored in a dark place.

It is a daily chore to check on the temperature, as sudden changes should be avoided. Adjust the window for ventilation. If moulds are noticed, partly open door and window for cross ventilation. Remember to close window during severe winter weather. Remove any decayed matter as soon as possible. Disinfect the storage room each spring.

## Outdoor Pits

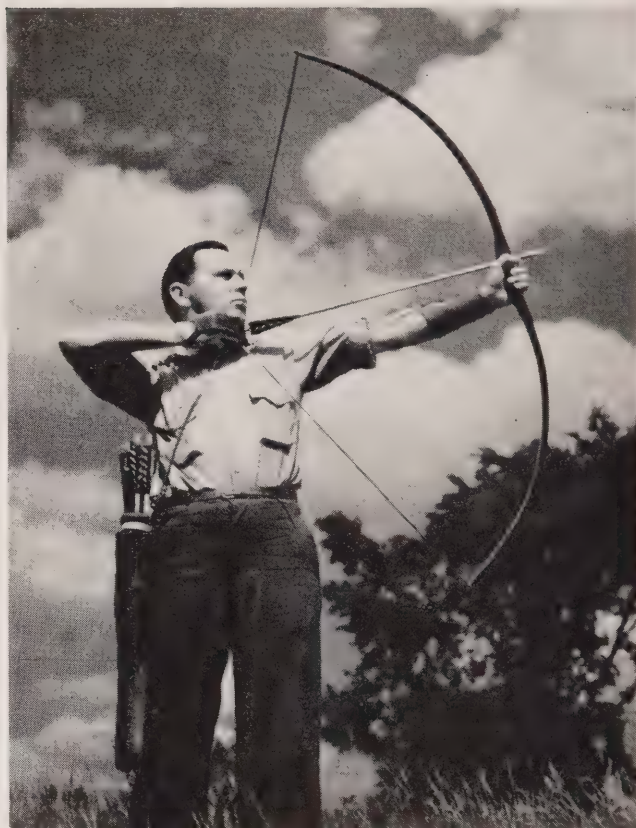
Outdoor pits keep vegetables very well, but it is sometimes difficult to get to them in cold weather. Several pits are preferable to one large one, so that all the vegetables may be removed when it is opened.

Covering a barrel with straw and earth provides a small outdoor storage space. Leaves will serve instead of straw. The stave barrel may be placed in a hole dug in the ground, or be placed on its side. Fill with trimmed, dry vegetables such as carrots, beets, turnips and potatoes. Add a shovel of sand to prevent any exchange of flavours if turnips are put in. Hang a piece of burlap over the top and put on the lid; then successive layers of earth and leaves are added to prevent freezing. Cover to a depth of at least two feet.

By planning proper storage facilities now Victory Gardeners can reap the full reward during the winter for the work done in the summer.

## STORAGE SUMMARY

VEGETABLE	TEMP.	RECOMMENDATIONS
DRY BEANS and PEAS	Cool	Dry place.
LATE CABBAGE	33 - 38°	Moderately moist, ventilated place.
CARROTS	33 - 37°	Pack in leaves or sand in cool place or keep in moderately moist, cool room.
CAULIFLOWER	33 - 38°	Keeps 3 or 4 months in ventilated place covered with its own leaves.
LATE CELERY	34 - 38°	Avoid rough handling and freezing. Pack roots in soil in storage.
ONIONS	34 - 40°	Store in shallow layers to prevent moisture.
PARSNIPS		Where they grew, or in soil in cellar: cannot be harmed by frost.
POTATOES	36 - 38°	Well ventilated, dark place.
PUMPKINS, SQUASH	50 - 65°	Avoid rough handling; keep dry.
TOMATOES, GREEN	50 - 60°	Wrap each in newspaper; store in cellarway or dry place.
TURNIPS	33 - 38°	Turnips, carrots, beets may be stored in outside pit or in a moderately moist, ventilated, cool storage room.

Champion Archer Of Canada:  
Hydro Man Has Many Awards

**A**BOW and arrow in the hands of a skilled enthusiast can be very effective in hunting, according to Arnold Wytenbach of the H.E.P.C. hydraulic department, who has the distinction of being Canada's professional champion archer, while he also holds the championships of the City of Toronto and the Toronto Archery Club.

These honours and many trophies bear testimony to Mr. Wytenbach's deadly aim with the arrow. One of these trophies is an ancient scorton silver arrow awarded in a "shoot" that had its origin in Yorkshire, England, in 1673, the Toronto Archery Club having obtained a charter to hold the competition here.

Mr. Wytenbach came to Canada from Interlaken, Switzerland, about seventeen years ago and took up archery in 1934 and in 1939 won the Canadian professional championship. He joined the Commission's staff as a draftsman a little over a year ago.

Archery as a recreation has gained in popularity on this continent in the past few years and is quite a favourite sport of the Armed Services, Mr. Wytenbach says. It is understood that there is at least one archer in every commando unit, who is sometimes called upon to effectively "silence" an enemy sentry or two.

Bulls eyes are not the only targets, as many archers use their bow and arrow to hunt rabbits, woodchucks, deer, moose, cariboo and bears.



## OGOKI OPENING

(Continued from page 7)

and floats during the summer, carried more than 1,800,000 pounds of freight and nearly 2,600 passengers within the Ogoki area during the construction period.

Some conception of the magnitude of the task can be formed from the fact that during the construction period nearly 800,000 cubic yards of earth and muskeg and 140,000 cubic yards of rock were taken out by the tireless jaws of the mighty excavating machines.

Where it was necessary to construct auxiliary earth dams a great deal of fill was also required. When the job was completed there were 65,000 cubic yards of rock fill, 284,000 cubic yards of earth, and 51,000 cubic yards of rip rap, used, in the dams which close low spots in the contour.

Completion of this unique project is hailed as another important chapter in the annals of Hydro service.

## CAMERON FALLS COMMUNITY

(Continued from page 9)

Landing. The small gas car operated on this line, can carry six passengers, mail and small consignments of freight. When a transformer or other pieces of heavy equipment have to be moved from the plant to the railway stop, the Hydro "locomotive" and a railway freight car are used. Although small and quaint in appearance, this gas-powered engine does an efficient job.

### Impressive Spectacle

While much might be written about the wild, rugged grandeur of the country in the vicinity of Cameron Falls and Alexander Landing, there is another colourful and impressive spectacle which invariably fascinates and holds the attention of the visitors: that is the driving of thousands of logs down the Nipigon river, over the dam at Cameron Falls, and down the log chute at Alexander Landing.

Above the dam, the drivers with their long spiked poles guide the masses of floating timber toward an open sluiceway. As each log nears the dam, it steadily gathers momentum until it is caught in the surging flow of rushing water. As they sweep over the dam, the logs almost disappear into a foaming mass of green and white spray. For a moment they rise high above the boiling, swirling river and are then carried on their way to Lake Superior.

A few impressions of the Cameron Falls area and the folk who are serving Hydro in the Thunder Bay system can be formed from the pictorial reproductions which accompany this article.

## CONVENTION DATES

District No. 6 convention is to be held at Kitchener on September 16. Morning and afternoon sessions will be conducted at the Walper House and, in the evening, dinner will be served at the Westmount Golf Club at which H. J. Graber, chairman of the Kitchener Public Utilities Commission, will preside.

The date for the Eastern Ontario, District No. 1 convention at Kingston has been tentatively set for September 24, while District No. 3 will meet at Fort William on October 5.

## A HUSBAND REBELS

*Must we, darling, every night  
Dine by fitful candlelight?  
Is it constantly my lot  
Whether we have guests or not,  
To be sitting here, my sweet,  
Groping for the food I eat?  
When I think of all I've spent  
On artistic fixtures meant  
To achieve an indirect,  
Hidden and diffused effect.  
Seems to me at times we might  
Switch on the electric light,  
And not always have this low,  
Dim, and dismal candle-glow.  
It's a light that lends perfection  
To the feminine complexion,  
But I can't detect a dish  
Of asparagus from fish,  
And I'm growing pretty weary  
Of these guessing-dinners, dearie.  
So, I warn you, give me Light,  
Or I'll stay out every night  
Dining in the places where  
There's a nice electric glare.  
If this leads to sins and scandals  
—Blame it on your blasted candles!*

These lines were submitted to the Editor of Hydro News by W. G. Pengelley of the Canadian Westinghouse Company, who says, "I cannot recollect where they came from or who might be the unfortunate author."

## DO YOU KNOW?

Uniforms can now be turned out in Canada at the amazing rate of one every eight seconds. And your \$100 Victory Bond will pay for nine of them.

A \$100 Victory Bond will drive 300 "jeeps" with 300 guns and 900 fighting men 20 miles closer to the enemy!

Only men of the Royal Navy are privileged to drink the king's health sitting down. Every Canadian is privileged to buy Victory Bonds.

Nylon rope is light yet tough enough for use in hauling gliders. A \$500 Victory Bond will pay for 300 feet of it and help hang Hitler!

If every Canadian buys one more War Savings Stamp each week during 1943, the resulting \$149,500,000 will pay for the clothing and equipment of every man and woman in our three services.

# In 1942 Ontario's 560,000 Hydro Users Consumed 1,224,000,000 Kilowatt-Hours

**B**ETWEEN 1914 and 1942 Hydro utilities in Ontario operating in municipalities have increased from 49 to 323, while the number of domestic consumers has grown from approximately 65,000 to 560,000, according to information given in domestic service tabulations recently completed by The Hydro-Electric Power Commission of Ontario. During the 28-year period the average monthly consumption of electricity by domestic users has increased almost nine times, whereas the average monthly bill increased from \$1.06 to \$2.24. In effect this means these consumers are now receiving four-and-a-half times as much power for the same dollar.

In 1914 the domestic consumers were using 14,000,000 kilowatt-hours of energy annually, and in 1942 the consumption had risen to 1,224,000,000 kilowatt-hours. This figure would, of course, have been much higher but for the necessity of conserving power for vital war industries.

Perhaps a better over-all picture may be obtained when it is understood that the average cost per kilowatt-hour in 1914 was 5.08 cents, and in 1942 it was 1.23 cents.

				Average Cost per Kw-Hr.	Average Monthly Bill	Average Monthly Consumption Kw-Hr.
All Domestic -----				1.23c	\$2.24	182.3
Cities Domestic -----				1.12	2.30	205.0
Towns Domestic -----				1.37	2.17	158.8
Villages Domestic -----				1.69	2.07	122.9

Year	No. of Municipalities	Annual Revenue	Kilowatt- hours Consumed	Number of Con- sumers	Average Cost per Kw-hr.	Average Monthly Bill	Average Monthly Consump- tion Kw.-hr.
1914	49	\$ 730,168.00	14,359,100	64,866	5.08c	\$1.06	21.0
1917	123	1,340,855.00	41,930,200	131,313	3.20	.91	28.6
1920	166	2,514,658.00	98,211,000	193,892	2.56	1.15	44.6
1923	206	4,955,420.00	242,926,600	286,852	2.04	1.54	75.7
1926	243	7,353,394.00	404,722,929	349,882	1.81	1.79	98.4
1930	273	10,752,720.00	671,028,310	433,260	1.61	2.09	130.1
1933	300	11,639,178.12	742,195,402	460,878	1.57	2.10	134.2
1936	302	12,922,466.47	881,972,324	482,557	1.47	2.23	152.3
1939	317	13,300,898.15	1,056,310,109	518,123	1.26	2.14	169.9
1940	317	13,905,290.46	1,115,888,837	531,514	1.25	2.18	174.9
1941	320	14,452,796.01	1,169,273,964	546,613	1.24	2.20	178.3
1942	323	15,022,931.26	1,224,195,712	559,605	1.23	2.24	182.3

Upper tabulation shows the average monthly consumption, average cost and average monthly bill for domestic consumers for 1942.

The lower one sets forth domestic statistics for all municipalities.

## "BREEDING GROUND FOR INFLATION"

**"W**AR is such a natural breeding ground for inflation that it challenges our best ingenuity in its control.

"A price control policy needs competent and determined administration, but above all, it requires public support and understanding. The enforcement of this policy affects such a wide variety of the customary freedoms of the individual that it would be impossible to make it work solely by regulation and coercive administration. These (restrictions) are not easy for freedom-loving

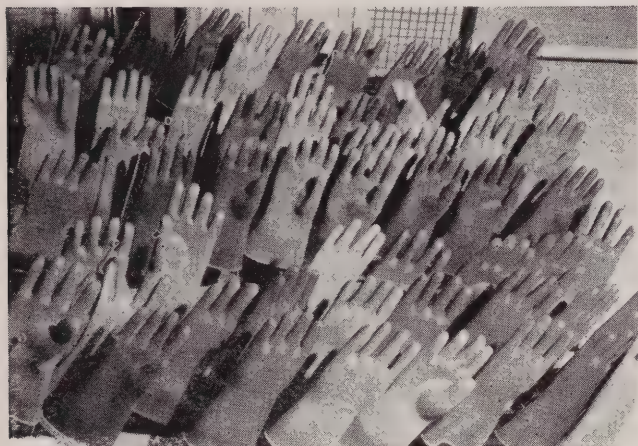
people to accept. They will be accepted only if all concerned can be impressed with the fact that this type of self-discipline, self-restraint, and voluntary co-operation is essential to the winning of the war and equally essential to secure in the post-war world the benefits of our victory.

"If we fail to control inflation now we shall be postponing any hope of the brave new world we are promising ourselves and our children."

—Donald Gordon.



## Gauntlets Are Given Up For Testing At Laboratory



**L**OOKS like unconditional surrender or throwing up the gauntlet at first glance!

Actually, however, these are linemen's rubber gloves drying on a rack after undergoing test at the H.E.P.C. laboratory.

About 20 years ago, as a safety measure, the H.E.P.C. devised a system of testing and drew up rigid specifications calling for a very careful visual examination and an initial dielectric test of 14,000 volts for one minute, followed by a 10,000-volt test for three minutes.

These tests are made by filling the glove with water to within one inch of the top of the cuff and immersing it until the water is within one-and-a-half inches of the end of the cuff.

Before a glove is accepted it must also pass a strength test (elasticity, stretch and recovery) and an ageing (Geer) test in an oxygen bomb.

When gloves in any shipment are accepted they are given serial numbers and an accurate record is kept of their destination and the number of times they are returned to the laboratory for test. When these gloves are put into service, it is customary to have them returned at certain definite periods for re-test. Gloves which are in continuous use are returned every second month. This means that each workman must have at least two pairs so that he can retain one for use while the others are being tested. Approximately 500 pairs are sent in each month.

Re-test means a careful visual examination and the application of 10,000 volts for one minute. If a flaw, even the size of a pin point is found, the gloves are rejected and withdrawn from service. If found to be in satisfactory condition, they are placed in envelopes, sealed and returned to their respective owners.

Shortage of rubber necessitated a change being made in the specifications to permit patching. As a result the hot-patch or what is generally known as the Shaler method, is being used in general repairs within five inches of the end of the cuffs.

Although leather covers are worn by linemen, they do not completely protect the cuffs of the rubber gloves from tearing by burrs on the wire. These repairs, therefore, lengthen the life of the gloves, which usually last from three to four years.

At the H.E.P.C. laboratory, gloves are tested, on request,

for municipalities, the Armed Forces and industrial organizations, including the Department of National Defence, Toronto Transportation Commission, Defence Industries Limited, National Harbour Board, and McKinnon Industries Limited.

### QUARTER CENTURY CLUB DINNER

Quarter Century Club members are reminded that the annual meeting and dinner will take place on October 22, 1943, at the King Edward Hotel, Toronto. In making this announcement, G. T. Brown, president, urged all members to attend, with a special appeal to newcomers to be present.

## A Perplexed Consumer Does "Squarest Thing"

**I**N a rural power district where the co-operation of consumers had been enlisted in reading their own meters, one consumer wrote the following letter to the local R.P.D. superintendent:

"Dear Sir: Do you mean that little box I found over behind where I hang the wash up to dry on rainy days? If you do I think it's broken because none of the hands is moving. I don't see very well but I'm not going any closer to the contraption on account of electric shock, or something.

"I turned on the hall light and went back down cellar, but still nothing was moving. This thing has four dials. They look like clocks excepting the numbers go only up to nine and it don't tick. Two of them go from zero, one, two, around to nine and two go zero nine, eight, around to one. Maybe the last two were put on backwards. None of the hands is moving so I figure it's either run down or broke. Something in there is humming, but I can't help that.

"The squarest thing I know to do is to tell you folks how much light we've been using since your man stopped coming around. Well there's the small light in the front hall. Then we have three in the living room, but most of the time only one of them is burning unless we got company. Then there's the one in the kitchen I cook by, and one in the dining room. I figure these two are lit only about an hour or two each evening, and the evening we went to Burleyville they weren't lit at all, only the small one in the hall, to see by when we come home late. The upstairs lights are only on for a jiffy when we're going to bed. Can't amount to much.

"You might like to figure in an iron I run for a couple of hours on Tuesdays. There's only two of us, and the wash isn't what you'd call heavy. Fred has a brooder, and some machinery out in the barn and I notice a lot of wires running around there, but I expect it has something to do with the telephone. We scarcely ever use the radio, but now and again Fred turns on the Farm Bureau for a little bit.

"I figure with daylight saving and all, we might owe you folks around a dollar. If this isn't satisfactory, you'd better send your man around the way you used to."



# Lighter Lines



"Fore" doesn't seem to do any good.  
Let's yell, 'dress sale!'"

A traveller seeking advertisements for a local paper called at the village grocer's. "Nothing doing," said the grocer. "Been established eighty years, and never advertised."

"Excuse me, sir, but what is that building on the hill?" asked the traveller.

"The village church," said the grocer.

"Been there long?" asked the other.

"About three hundred years."

"Well," was the reply, "they still ring the bell."

\* \* \*

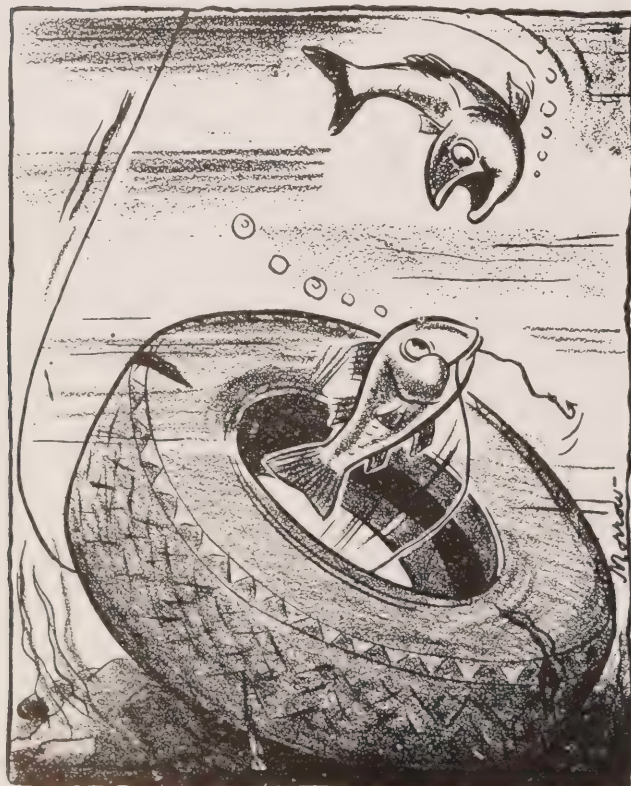
Oletimer: "Is your married life one grand sweet song?"

Newlywed: "Well, since our baby's been born it's more like an opera, full of grand marches, with loud calls for the author every night."



"So you want to run things in your home. Okay, Wilbur, start on this!"

## Rubber Scraps



"I'm hooking the tire to help salvage scrap rubber".



"Can you lend me a cup of Thermite—I just need a little to finish up a batch of incendiaries!"



## JULY LOAD FIGURES

LOAD figures for the month of July, 1943, are recorded below. Based on the maximum 20-minute peak horsepower load for the period, the summary covers all four Hydro systems and the Northern Ontario Properties. Complete load tabulations for July and the corresponding month of last year are as follows:

### PRIMARY LOADS

	Maximum 20-Min. Peak H.P. July, 1943	July, 1942	Per Cent. Increase
Niagara System	1,561,662	1,560,992	0
Eastern Ontario System	191,186	174,084	9.8
Georgian Bay System	55,015	53,282	3.3
Thunder Bay System	101,307	101,233	.1
Nor. Ontario Properties	191,347	217,790	-12.1
Total of All Systems	2,100,517	2,107,381	- .3

### PRIMARY AND SECONDARY LOADS

	Maximum 20-Min. Peak H.P. July, 1943	July, 1942	Per Cent. Increase
Niagara System	1,662,064	1,566,756	6.1
Eastern Ontario System	191,186	174,084	9.8
Georgian Bay System	55,015	53,282	3.3
Thunder Bay System	120,938	110,912	9.0
Nor. Ontario Properties	230,623	261,489	-11.8
Total of All Systems	2,259,826	2,166,523	4.3

## HYDRO GIRLS ON ACTIVE SERVICE



P. C. Ferris



Helen Gill



Grace Lake



H. P. Crysler



J. C. Dobson



V. Ferguson

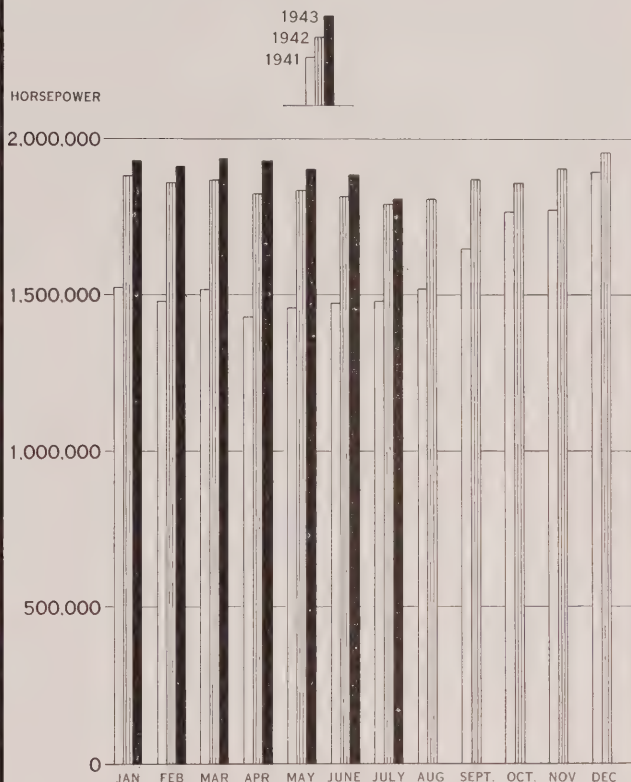


H. Whiting

Shown above are some of the Hydro girls who are now in the armed services. They are Patricia C. Ferris of the testing and inspection department, Helen P. Crysler and Joan C. Dobson, secretarial department, Vivian M. Ferguson, operating department, and H. June Whiting, Belleville, all with the W.R.C.N.S.; Helen Gill, electrical engineering, C.W.A.C., army show division; and Grace Lake, testing and inspection, R.C.A.F.

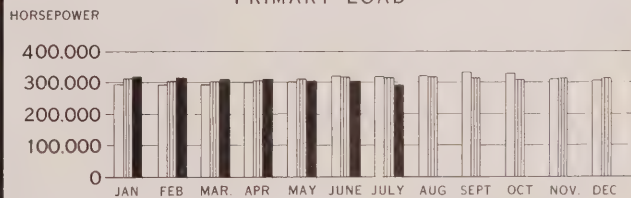
## SOUTHERN ONTARIO SYSTEMS NIAGARA — GEORGIAN BAY — EASTERN ONTARIO

### PRIMARY LOAD



## NORTHERN ONTARIO PROPERTIES AND THUNDER BAY SYSTEM

### PRIMARY LOAD



### PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	JULY, 1943	JULY, 1942	
NIAGARA SYSTEM	1,561,662	1,560,992	0
GEORGIAN BAY SYSTEM	55,015	53,282	+ 3.3
EASTERN ONTARIO SYSTEM	191,186	174,084	+ 9.8
THUNDER BAY SYSTEM	101,307	101,233	+ 0.1
NORTHERN ONTARIO PROPERTIES	191,347	217,790	- 12.1
TOTAL	2,100,517	2,107,381	- 0.3

# MUNICIPAL LOADS, JUNE, 1943

NIAGARA SYSTEM (25-Cycle)			Popula- tion			Popula- tion		
	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Acton	1,511	1,903	Erie Beach	37	21	Palmerston	559	1,400
Agincourt	210	P.V.	Essex	566	1,886	Paris	1,631	4,604
Ailsa Craig	140	487	Etobicoke Twp.	6,776	V.A.	Parkhill	187	1,029
Alvinston	85	649	Exeter	670	1,654	Petrolia	876	2,768
Amherstburg	852	2,704	Fergus	1,367	2,759	Plattsville	124	P.V.
Ancaster Twp.	356	V.A.	Fonthill	135	860	Point Edward	1,580	1,199
Arkona	41	403	Forest	559	1,562	Port Colborne	1,988	6,928
Aurora	1,351	2,821	Forest Hill	5,946	12,172	Port Credit	819	1,934
Aylmer	836	1,985	Galt	10,700	15,126	Port Dalhousie	1,063	1,599
Ayr	220	760	Georgetown	1,701	2,452	Port Dover	475	1,790
Baden	491	P.V.	Glencoe	180	763	Port Rowan	76	700
Beachville	759	P.V.	Goderich	1,619	4,674	Port Stanley	794	824
Beamsville	398	1,227	Granton	77	P.V.	Preston	4,070	6,656
Belle River	175	836	Grimsby	808	1,988	Princeton	144	P.V.
Blenheim	492	1,873	Guelph	10,338	23,074	Queenston	136	P.V.
Blyth	133	662	Hagersville	1,130	1,524	Richmond Hill	441	1,295
Bolton	206	629	Harriston	463	1,292	Ridgetown	501	1,986
Bothwell	115	683	Harrow	505	1,092	Riverside	1,006	5,235
Brampton	2,574	5,975	Hensall	187	686	Rockwood	139	P.V.
Brantford	20,129	31,622	Hespeler	2,623	2,938	Rodney	126	758
Brantford Twp.	937	V.A.	Highgate	83	322	St. Clair Beach	98	138
Bridgeport	142	P.V.	Humberstone	511	2,831	St. George	139	P.V.
Brigden	68	P.V.	Ingersoll	3,126	5,757	St. Jacobs	274	P.V.
Brussels	143	784	Jarvis	177	513	St. Marys	1,515	4,009
Burford	269	P.V.	Kingsville	467	2,453	St. Thomas	7,240	17,045
Burgessville	44	P.V.	Kitchener	24,298	35,456	Sarnia	9,645	18,599
Burlington	1,323	3,925	Lambeth	110	P.V.	Scarborough Twp.	4,092	V.A.
Burlington Beach	408	1,474	LaSalle	217	907	Seaforth	681	1,782
Caledonia	300	1,430	Leamington	1,256	6,048	Simcoe	2,074	6,340
Campbellville	35	P.V.	Listowel	1,450	2,984	Smithville	105	P.V.
Cayuga	95	700	London	36,240	77,105	Springfield	54	382
Chatham	5,711	17,184	London Twp.	451	V.A.	Stamford Twp.	2,503	8,275
Chippawa	276	1,228	Long Branch	1,101	4,258	Stoney Creek	218	933
Clifford	97	491	Lucan	212	643	Stouffville	318	1,198
Clinton	685	1,879	Lynden	114	P.V.	Stratford	7,288	17,163
Comber	141	P.V.	Markham	368	1,175	Strathroy	1,532	2,834
Cottam	61	P.V.	Merlin	78	P.V.	Streetsville	206	701
Courtright	38	355	Merritton	11,219	2,916	Sutton	313	949
Dashwood	114	P.V.	Milton	1,442	1,915	Swansea	2,912	6,907
Delaware	68	P.V.	Milverton	374	994	Tavistock	656	1,080
Delhi	312	2,430	Mimico	2,294	7,987	Tecumseh	338	2,331
Dorchester	77	P.V.	Mitchell	724	1,670	Thamesford	221	P.V.
Drayton	141	528	Moorefield	47	P.V.	Thamesville	155	816
Dresden	392	1,525	Mount Brydges	92	P.V.	Thedford	75	598
Drumbo	123	P.V.	Newbury	33	288	Thorndale	88	P.V.
Dublin	56	P.V.	New Hamburg	576	1,441	Thorold	2,053	5,284
Dundas	2,550	5,245	Newmarket	1,923	3,800	Tilbury	1,316	1,923
Dunnville	1,081	3,916	New Toronto	11,314	9,469	Tillsonburg	1,175	4,602
Dutton	239	830	Niagara Falls	10,036	20,371	Toronto	325,685	657,612
East York Twp.	6,604	41,578	Niagara-on-the-Lake	889	1,764	Toronto Twp.	3,062	V.A.
Elmira	1,232	2,069	North York Twp.	8,120	V.A.	Wallaceburg	3,550	4,802
Elora	487	1,185	Norwich	397	1,301	Wardsville	33	221
Embro	140	420	Oil Springs	161	541	Waterdown	233	867
Erieau	123	281	Otterville	98	P.V.	Waterford	404	1,294
						Waterloo	5,332	8,968



# MUNICIPAL LOADS, JUNE, 1943

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Watford	379	1,023	Neustadt	40	431	Lakefield	347	1,301
Welland	11,175	14,899	Orangeville	701	2,558	Lanark	78	686
Wellesley	135	P.V.	Owen Sound	5,894	13,559	Lancaster	41	570
West Lorne	196	768	Paisley	113	730	Lindsay	3,899	8,345
Weston	4,611	6,165	Penetanguishene	1,004	4,177	Madoc	188	1,130
Wheatley	180	761	Port Carling	223	520	Marmora	113	1,004
Windsor	46,154	104,415	Port Elgin	556	1,415	Martintown	35	P.V.
Woodbridge	628	946	Port McNicoll	90	950	Maxville	96	811
Woodstock	7,896	12,339	Port Perry	321	1,175	Millbrook	83	749
Wyoming	57	538	Priceville	10	P.V.	Morrisburg	275	1,484
York Twp.	17,130	77,175	Ripley	109	420	Napanee	1,364	3,241
Zurich	144	P.V.	Rosseau	31	305	Newcastle	155	701
(25 and 66-2/3 Cycle)			Shelburne	271	1,053	Norwood	125	710
Hamilton	150,686	164,719	Southampton	594	1,467	Omeme	172	630
St. Catharines	28,642	32,559	Stayner	295	1,105	Orono	80	P.V.
Trafalgar Twp.	591	V.A.	Sunderland	71	P.V.	Oshawa	16,432	26,610
(66-2/3 Cycle)			Tara	108	510	Ottawa	34,490	150,861
Bronte	114	P.V.	Teeswater	119	873	Perth	1,738	4,197
Oakville	880	3,369	Thornton	37	P.V.	Peterborough	11,457	24,977
GEORGIAN BAY SYSTEM			Tottenham	89	532	Pictou	1,153	3,400
(60-Cycle)			Uxbridge	366	1,480	Port Hope	2,325	4,997
Alliston	453	1,700	Victoria Harbour	77	979	Prescott	1,487	3,283
Arthur	145	1,089	Walkerton	977	2,534	Richmond	69	428
Bala	175	355	Waubushene	107	P.V.	Russell	74	P.V.
Barrie	4,063	9,559	Warton	233	1,750	Smith Falls	2,967	7,741
Beaverton	278	941	Windermere	28	117	Stirling	337	947
Beeton	131	617	Wingham	684	2,149	Trenton	4,911	8,183
Bradford	195	1,041	Woodville	64	439	Tweed	252	1,181
Brechin	45	P.V.	EASTERN ONTARIO SYSTEM			Warkworth	65	P.V.
Cannington	199	761	(60-Cycle)			Wellington	210	948
Chatsworth	90	333	Alexandria	158	1,976	Westport	83	725
Chesley	546	1,812	Apple Hill	47	P.V.	Whitby	1,331	4,236
Coldwater	133	545	Arnprior	1,182	4,019	Williamsburg	89	P.V.
Collingwood	2,646	6,249	Athens	117	626	Winchester	355	1,017
Cookstown	98	P.V.	Bath	43	325	THUNDER BAY SYSTEM		
Creemore	151	661	Belleville	7,156	15,498	(60-Cycle)		
Dundalk	270	686	Bloomfield	126	636	Fort William	14,032	30,370
Durham	444	1,874	Bowmanville	2,588	3,850	Nipigon Twp.	194	V.A.
Elmvale	180	P.V.	Brighton	417	1,462	Port Arthur	20,341	24,217
Elmwood	68	P.V.	Brockville	4,815	10,576	NORTHERN ONTARIO		
Flesherton	58	452	Cardinal	352	1,602	PROPERTIES		
Grand Valley	143	645	Carleton Place	1,897	4,143	Nipissing District		
Gravenhurst	1,006	2,261	Chesterville	276	1,094	(60-Cycle)		
Hanover	1,475	3,190	Cobden	79	643	North Bay	4,430	16,013
Holstein	14	P.V.	Cobourg	2,284	5,907	Patricia District		
Huntsville	1,085	2,943	Colborne	199	960	(60-Cycle)		
Kincardine	735	2,483	Deseronto	203	1,002	Sioux Lookout	300	1,967
Kirkfield	25	P.V.	Finch	116	396	Sudbury District		
Lucknow	359	856	Frankford	156	1,095	(60-Cycle)		
Markdale	195	776	Hastings	117	823	Capreol	239	1,660
Meaford	727	2,759	Havelock	113	1,103	Sudbury	8,659	32,731
Midland	4,326	6,764	Iroquois	225	1,123			
Mildmay	153	764	Kemptville	377	1,230			
Mount Forest	497	1,936	Kingston	12,780	29,545			



# Hydro meets Nature's Challenge



SUMMER or winter, when nature cuts loose with a blitzkrieg of wind, torrential rains, lightning, ice, sleet or snow most people hurry for cover . . . and stay there. But not Hydro maintenance crews. For them a storm is the zero hour . . . and task forces go forth to battle.

● Last winter's sleet storm in Eastern Ontario is but one example of their work. Hours of freezing rain followed by a blizzard sheathed the district in ice and snow. Streets and roads were blocked by a fantastic tangle of poles, trees and wire. Hundreds of Hydro poles were down. Country roads blocked with snow.

● Within a few hours over 200 Hydro men were on the job. Supplies were rushed to strategic points. Men and trucks went to work . . . line breaks were repaired, broken poles replaced, wire restrung. Point by point the battling "storm troopers" restored the flow of Hydro to war production plants, factories, farms and homes . . . pushed relentlessly ahead, day and night, until the job was done.

● The work of Hydro maintenance crews is one of unrelenting vigilance. Power must go through regardless of conditions. Across Ontario, Hydro men are on the alert twenty-four hours a day . . . ready, at all times, to combat any storm . . . ready to meet any emergency . . . ready to stay on the job until power is again flowing . . . doing their part in helping Ontario's war-gearred industries speed the supply of Victory munitions to the battle-fronts of the world.

**ELECTRICITY**  
IS A  
**WAR WEAPON**  
*Save it!*

**THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO**



# HYDRO News



WHEN LIGHT  
MEANS LIFE





# Power

PACES ONTARIO'S WAR PRODUCTION

**Hydro and Ontario's Industries work side by side to produce the weapons of war!**

The roar of Ontario's industries, working twenty-four hours a day, is thundering Canada's challenge to the Axis. Production is mounting month by month. Records are broken with almost monotonous sequence. The trickle became a stream . . . the stream has turned into a torrent reaching every battle front.

**And the power that helps make this production possible is Electric Power.**

Power is essential to our war effort. Until peace comes Hydro turbo-generators will continue to produce this vital element day and night, without rest . . . helping Ontario's industries set the "all-out" pace for Victory. Greatly increased quantities of power have been provided by Hydro since war began. However . . . even with this additional supply . . . there is not enough today to permit wide-spread use as in peace-time. Already many Hydro consumers have voluntarily played a splendid part in saving electricity. But there can be no "let up"—this conservation must continue and be increased to provide power to meet the growing demands of war industries.

*We look to the days of peace when there will be power for every use. In the meantime . . . do your part . . . invest in Victory by saving your share of electricity every day.*

**SAVE HYDRO**

USE ELECTRICAL APPLIANCES WITH CARE



# HYDRO News

*formerly The BULLETIN*

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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## The Front Cover



**T**HIS month's front cover entitled "Where Light Means Life" points up the part Hydro is taking in aiding the physician and surgeon in their endeavour to relieve human suffering. The picture shows one of the latest type operating room lights. The photographer attempted to catch the view a patient would get as he lies on the operating table just before he slips into oblivion under the effects of the anaesthetic.

Volume 30

October 1943

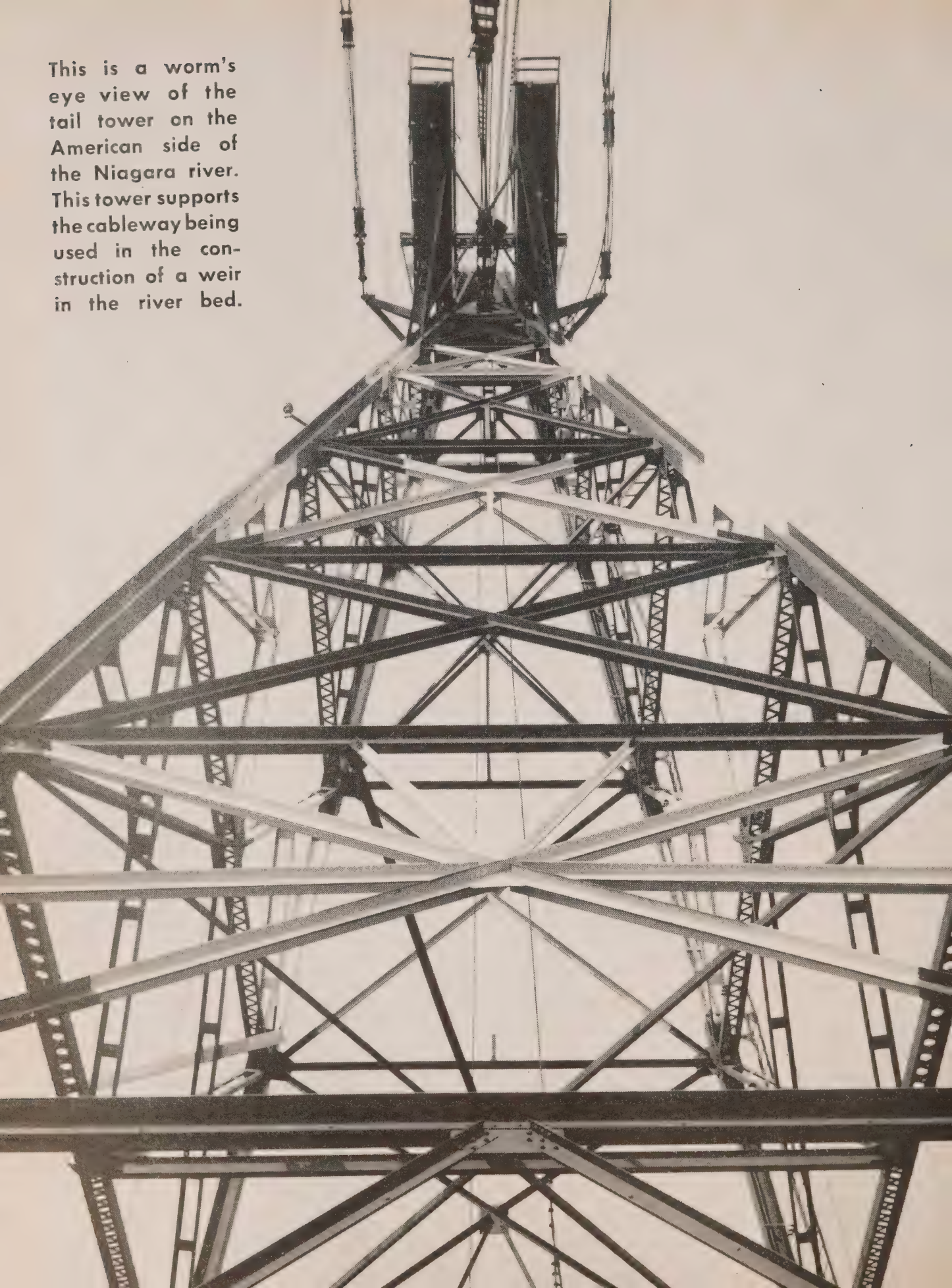
Number 10

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This is a worm's  
eye view of the  
tail tower on the  
American side of  
the Niagara river.  
This tower supports  
the cableway being  
used in the con-  
struction of a weir  
in the river bed.





## \* *Page Three* \*

### **SPEED THE VICTORY**

**G**OOD NEWS from the war fronts has not lulled the democratic peoples into a state of complacency nor has it brought about a slackening of effort; rather it has acted as a tonic to stimulate the national morale. As our courageous forces sweep forward on the attack, after a series of outstanding successes, they face the enemy with renewed hope and confidence. We in Canada are being given another opportunity of expressing our confidence in over-whelming victory.

Canada's Fifth Victory Loan gets under way within a few days with the gigantic, but not unattainable, objective of one billion two hundred million dollars. Previous loans floated by the Dominion during this war have, without exception, been over-subscribed, even at a time when our prospects of military victory were far less encouraging than they are today. The invasion of Continental Europe, with thousands of our Canadian boys fighting side by side with other Allied forces, is proceeding at a swift pace. The intensity of this advance must be maintained and increased.

Our moral support is not enough. We must translate our optimism into dollars and cents to finance the staggering demands of wartime. Nothing short of our utmost effort will demonstrate to our fighting men that we are with them every step of the way.

Every Hydro employee throughout the Province can and should become an investor in victory. Our willingness to back the Fifth Victory Loan to the very limit of our personal resources may well hasten the return of our loved ones from the battlefronts of the world.

Let us stand united in our resolve to "Speed the Victory".

### **WE GIVE THANKS**

**O**NCE again we approach the season when Canadians, young and old, unite in a paean of thanksgiving for their many blessings. We in this great country have much for which to be thankful, despite rationing and wartime restrictions, now interwoven in the fabric of our daily lives, our

standard of living appears luxurious in comparison with that prevailing in nations ravaged by the physical horrors of war.

To compensate for farm labour shortage and to increase food production, Canadians have enthusiastically supported the national victory garden campaign. In return for their efforts victory gardeners are now reaping a bountiful harvest.

Hydro employees may derive justifiable pride from the unique success of their victory garden campaign in its first year of operation. From 745 registered victory gardens they have harvested produce with an estimated value of \$21,000, and in many cases the success of the venture exceeded even their fondest hopes. To those who organized this fine patriotic service, and to those who took part in any way, the highest commendation is due. It was a most gratifying achievement.

### **SERVING HUMANITY**

**T**HE seemingly unlimited uses for electric power have brought about revolutionary changes in our domestic, industrial and economic life. But perhaps nowhere has electricity contributed so much as in the field of medical science, where it has alleviated human suffering and given new hope to those whose lives have been blighted by disease and affliction.

Electrical equipment in the modern hospital has been invaluable to the doctor in his ministrations to the sick. Hospital operating theatres have been improved by new lighting facilities; sterilizing lamps fight bacteria; the X-ray diagnoses and cures disease; electronic microscopes aid medical research; electrical communication systems serve both doctor and patient; while in countless other ways, including the preparation of food, does electricity enter into the operation of these great institutions.

Elsewhere in this issue of Hydro News, attention is directed to the role of electricity in the hospital of today, working hand in hand with medical science to increase human happiness.

ONE OF THE most modern institutions dedicated to the healing art is Toronto's Western Hospital. On the left of this photograph is the old Bathurst Street building and in the center is the new fourteen storey private patients' pavilion.



# Handmaiden of Healing

CRISS-CROSSING Ontario's countryside on stilts of steel and wood, Hydro has had a vitalizing influence upon the industrial, commercial, and domestic life of the Province reaching into the heterogeneous fields of human enterprise to aid in the development of new and more effective techniques.

In one of these fields—that of healing—it is performing a thousand and one tasks. In the hospital it is the never failing and efficient handmaiden of the diagnostician, radiologist, and surgeon and the untiring servant of nurse, dietitian and cleaner.

Recently, Hydro News, was presented with the opportunity of seeing Hydro at work in one of the most modern institutions dedicated to the healing art on this continent—Toronto's Western Hospital. Major Sir Thomas John Carey Evans, famous British surgeon and medical

superintendent of the Hammersmith Hospital, in London, England, while in Canada, shortly after the new private patients pavilion was constructed declared: "It is the last word in efficiency and I have not seen anything finer in France, Germany, England, or any other place."

While it would be impossible to outline in detail in this article the contribution Hydro is making in maintaining this vital service, a number of its important functions are discussed. At the same time, photographs accompanying this article serve to emphasize the wide diversity of the jobs electricity is called upon to undertake. The hospital load is 350 horsepower, although the installed capacity is 700 horsepower. Electric service is supplied the hospital by the Toronto Hydro-Electric system at 550 volts, three phase, 25 cycles.

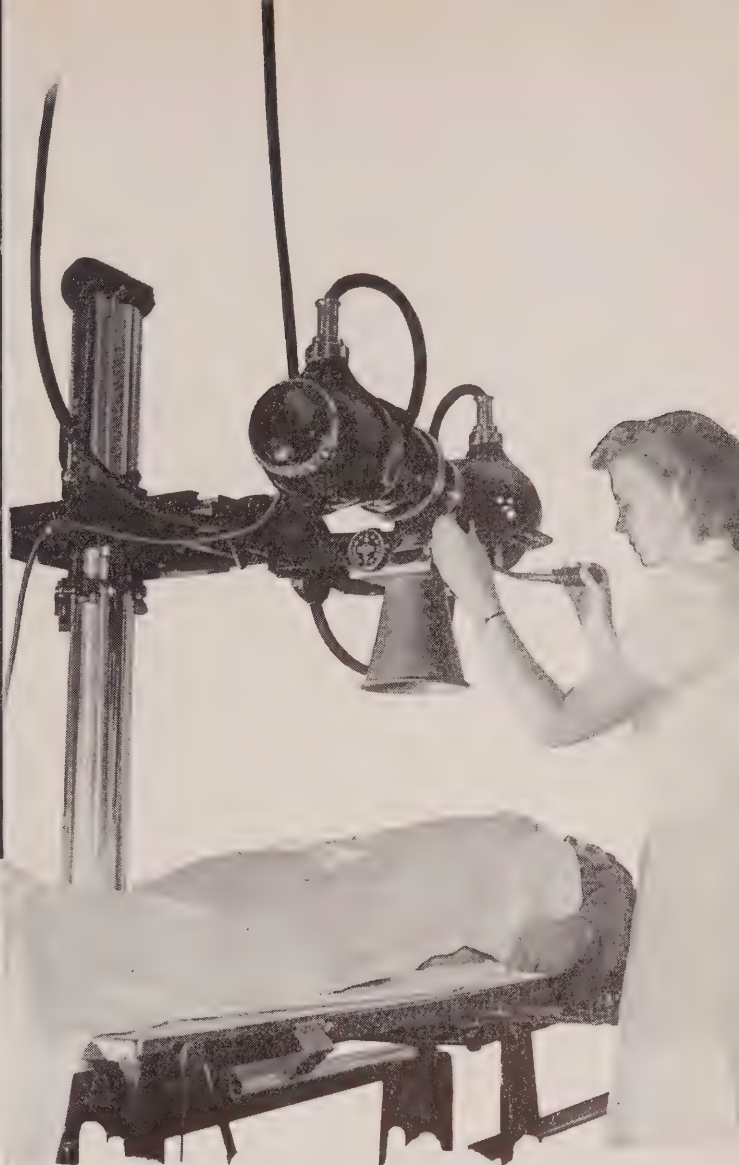
Possibly one of the most important tasks performed



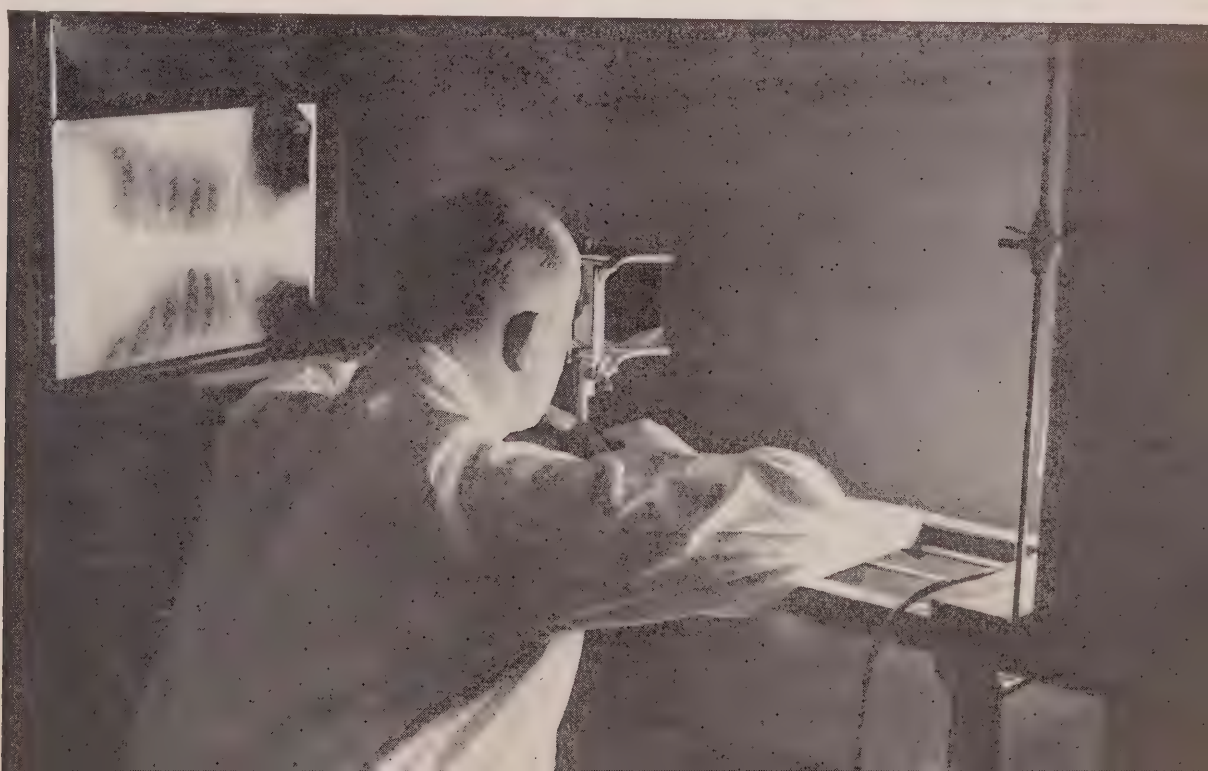


IN THE PHOTOGRAPH above, a nurse is shown at the controls of the deep therapy machine for the treatment of cancer. With the aid of the meters shown in the picture she is able to regulate the dosage according to the doctor's orders.

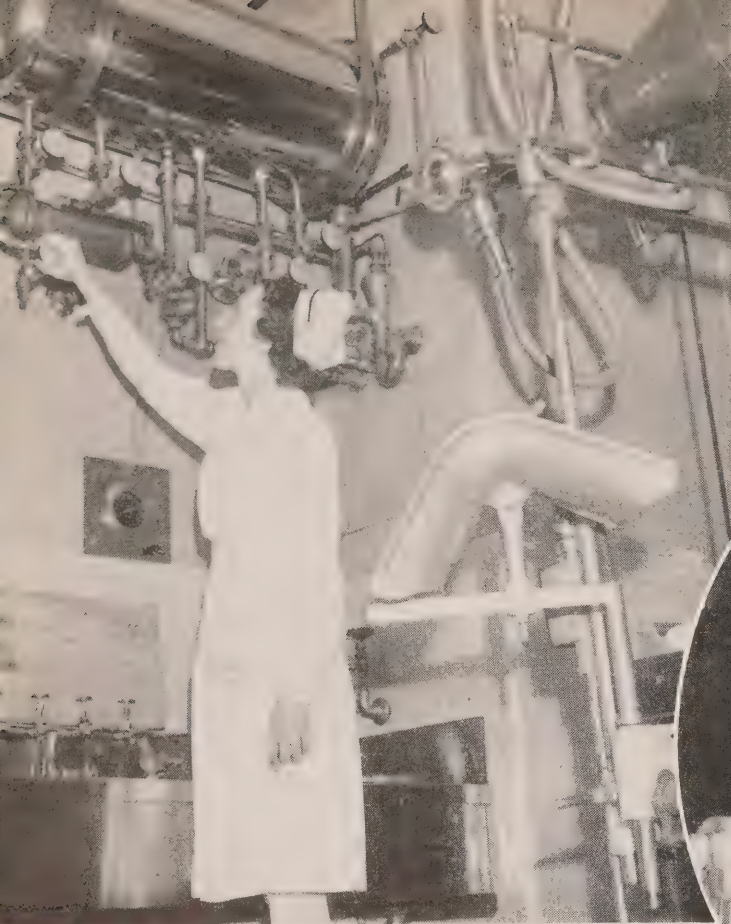
ON THE RIGHT, a technician is shown adjusting the machine above a patient to take an X-ray plate. The metal clad film is held in a slide on the under side of the table.



BELOW, A DOCTOR examines an X-ray plate through a stereoscope which enables him to see the subject in the third dimension (depth), which was impossible with flat X-ray plates before the development of this machine.







ON THE LEFT a nurse manipulates the valves of the sterile water supply in the cystoscopic operating room. On the right may be seen X-ray equipment.

IN THE CIRCLE, a nurse examines a slide under a high power microscope. A small bulb below an opal glass lights up the subject matter being examined.

BELOW, THE NURSE lays her fingernail alongside the tiny wheat grain light bulb of the cystoscope which supplies light directly to the area being operated upon.



by Hydro in the hospital is in the operation of X-ray equipment. This apparatus not only performs the most common task of aiding the surgeon in the setting of broken bones but is an invaluable aid to the diagnostician in determining the numerous ills which beset the human frame. By its aid and that of the very similar fluroscope the physician may watch the various organs as they perform their tasks of nourishing the body and visually examine the heart and lungs.

#### Probe Cancer Cause

While scientists probe further into the mysteries of nature and seek the cause of the scourge of cancer, Hydro, through the agency of the roentgen ray, continues to give relief to suffering and on occasion effects a cure.

Special equipment of various types was provided to meet the needs of the Toronto Western Hospital. Among the most important is that for G. U. examination, gastric intestinal, chest and bone, skull, and dental X-ray. Complete equipment for the examination and setting of all types of fractures is provided in the fracture room. Special mobile equipment is also available, when necessary, for use in the operating rooms. This equipment is needed during the progress of certain operations, particularly in the use of Steinman pins. These pins used in the treatment of hip fractures eliminate the necessity for the heavy casts which were formerly used.

With the increased tempo of employment in war plants has come a proportionate increase in the number of emergency operations resulting from industrial accidents. Here the X-ray is an invaluable aid in the localization and detection of foreign bodies in the eyes and other parts of the body. With special equipment now in use it is pos-





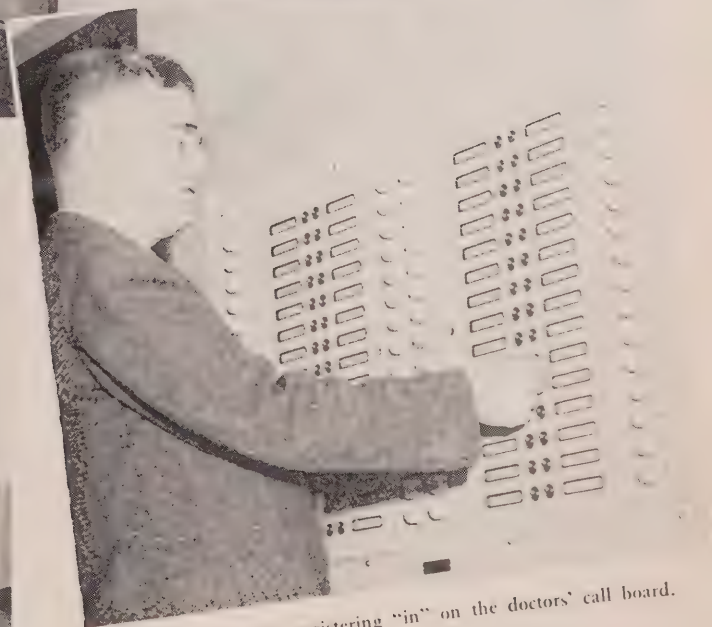
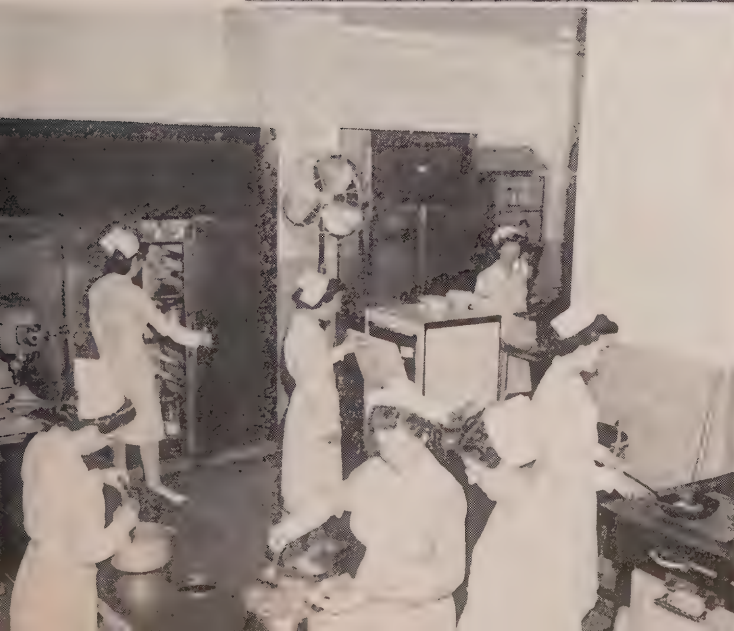


MAIN SWITCHBOARD IN the new private patients' pavilion at the Toronto Western Hospital.



THE OPERATOR WRITES a message on the telautograph which flashes it to a number of key points in the hospital building. Behind is seen the doctor's call board.

THIS IS A bank of electric-heated wheeled containers used to distribute food from the main kitchen to the serving pantries. Below is shown the diet kitchen.



A DOCTOR IS registering "in" on the doctors' call board.





AN OPERATING ROOM scene is shown above, while on the right is seen a patient undergoing deep therapy treatment for cancer.

sible to estimate the position of the foreign body within one millimetre of its actual location. With the use of an instrument similar to the old-fashioned stereoscope, which graced the parlours of homes in the "Gay Nineties", it is possible to locate these bodies in the third dimension—that is depth below the surface—previously impossible with flat X-ray plates.

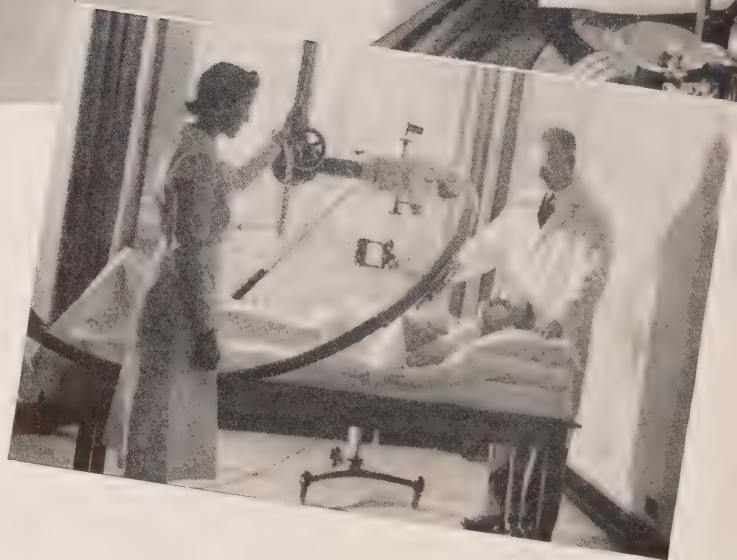
Here again Hydro plays an important role in providing power to energize powerful electro magnets, which draw metallic particles from delicate eye tissue.

With the development of high frequency cutting knives which utilize electricity for the actual cutting operation and closing of the tiny blood vessels, the mortality rate attributable to cystoscopic disorders has been completely reversed.

### Modern Equipment

In the cystoscopic operating rooms the most modern equipment devised by man has been placed at the disposal of the surgeon. A tiny light bulb, no larger than a grain of wheat, enables the surgeon to watch every move while the tissue is being pared away by the high frequency cutting knife. Meanwhile the position of the operating table may be moved, a fraction of an inch if necessary to the proper manipulation of the instrument, by the simple pressure of the surgeon's foot upon a switch.

The most interesting part of this apparatus is the elec-



tric cutting knife. Here 25-cycle power is converted to 120-cycle and the voltage raised so that a small electric arc separates the tissue. So fine and sensitive is the instrument that in the hands of a skilled surgeon it is possible to separate the two layers of skin covering the human body. Should the surgeon desire to retard bleeding while performing the operation a flick of a switch and a lower voltage current coagulates the blood retarding bleeding and reduces the shock to the patient to a minimum. The result has been a drastic reduction in the time of convalescence and in suffering and discomfort to the patient.

In the operating room where light must be concentrated



on the operating area without glare in the surgeon's eyes and shadows eliminated, electricity is the ideal servant. In these lights a single 200 watt spotlight bulb supplies sufficient illumination, while shadows and glare are eliminated by the use of lenses and reflecting mirrors. Thus the light is thrown on the subject from every angle as the swift, sure, skilled hands of the surgeon guide the scalpel.

A great deal of electrical equipment is used in the Physio-Therapy Department and great strides are being made in the application and development of this type of treatment. Among this equipment is included the diatherm, short wave and ultra violet light treatment.

#### Use Shock Treatment

Of particular interest is the Electro Shock Therapy Unit of which it is said there is only one in use in a general hospital. This equipment has been found to be more efficacious in the treatment of cases of mental depression than the drug which was used formerly. Doctors have found that it is much more easily controlled and that the patient responds to treatment much more quickly. Its effect upon the patient is also less severe.

Nurseries in a modern hospital are protected from airborne germ infection by the use of Ultra Violet ray disinfecting units. The use of the old-style incubators for the care of prematurely born infants has been superseded by the premature nursery. This is a room completely air conditioned and kept at the proper temperature and humidity by electrified control. Thus is the danger of the frail morsel of humanity getting a chill at feeding time entirely eliminated.

Tasty meals to tempt the fickle appetite of the convalescent must be served while hot, yet for economy and convenience, must be prepared in a centrally located kitchen. Here again Hydro comes to the rescue. The food, with the exception of special diets, is prepared in one kitchen and distributed to the various wards in electrically heated wheeled containers. These containers deliver the food piping hot to the serving pantries throughout the building where the individual trays are made up and taken to the patients.

#### Nurses Within Call

Nurses are within sound of the patient's voice at all times through a recently developed acoustical device. With this machine, similar to a radio, which comes into operation with the pressing of the nurse's call button, it is possible for the nurse to talk to the patient without leaving her station. Thus she is able to ascertain the patient's requirements before going to the room, and save many minutes in relieving distress.

Doctors entering and leaving the hospital notify the main switchboard by simply flicking a switch as they enter the doctor's lounge. This illuminates their name on a call board located in the switchboard office. Should a call for them come in, the operator simply flicks another switch and a light beside their names flashes on. When the doctor notices the light he calls the operator and is given the message. Similarly as he leaves the building, he presses the switch, the light goes out, and the operators know that he has left the hospital.

If an urgent call which demands a doctor's immediate attention is received, the operator writes the message, with a pencil of steel on the telautograph and it is flashed simul-

taneously to key stations located over the entire building.

Gleaming floors are kept shining by almost noiseless electric polishers working continually. Gone are the days of the charwoman on hands and knees, with her pail of soapy water, laboriously scrubbing. These heavy tasks have been taken over by the Hydro servant, and she is released for lighter work still necessary to keep a modern hospital spick and span.

Auxiliary electrical equipment is kept ready at all times, so that in the event of air raids, within the space of minutes subsidiary power can be provided. A huge diesel engine in the basement of the building drives a 275-kv-a generator to supply sufficient energy for the needs of the entire hospital.

Hospital authorities declare that it would be almost impossible to operate a modern skyscraper hospital without electricity. Air conditioning units, which provide forced draft ventilation for every room, an air change throughout the entire building which does much to banish odours, would be practically impossible without its aid. Without the use of electricity the hospital would be without hot or cold water above the sixth floors. Up to this height the pressure in the city's mains will force the water, but beyond that auxiliary electric pumps must be used to boost the water the remaining eight floors.

This hospital is to-day one of Toronto's prominent landmarks and stands as an impressive monument to the men whose vision and humanitarian principles inspired its origin. Twelve Toronto doctors, each of whom subscribed a hundred dollars, provided the nucleus from which the Toronto Western Hospital grew to its present size with a plant now valued at \$2,500,000.

It was founded in 1896 and obtained its first act of incorporation under the Charities and Benevolent Act of the time. Later it was incorporated by special act of the Ontario Legislature. In 1913 this act was repealed, and a new act, granting the institution enlarged powers and setting up its present system of government, was passed by the legislature.

Written on a prescription form are the names of the twelve doctors who founded the hospital and this historic document is preserved in the archives of the hospital. The doctors were: George H. Carveth, Price Brown, J. F. Davison, James McCullough, John Hunter, J. B. Gullen, T. S.

*(Continued on next page)*



THIS IS ONE of the tents, which at the turn of the century, was used for several years to house patients when the hospital accommodation became overcrowded.

# H.E.P.C. LAUNCHES VICTORY LOAN

**Y**OU'D give everything you own right now to see "Axis Surrenders" flashing across the newspaper headlines. That news flash is coming. It's coming soon, and how soon depends upon how well you support the Fifth Victory Loan.



The national objective this time is one billion, two hundred million dollars. An astronomical sum, but not unattainable if we all put forth a supreme effort.

Victory is on the way, but there is still plenty of fighting to do and we on the home front have to keep backing our boys at the battle front. There is no holding back over there — sailors, soldiers and airmen are seeing plenty of action with planes,

ships, tanks and guns. They are talking to the foe in the only language he understands. By buying bonds at 3 per cent. interest we can back our fighters as we've never backed them before. They are doing their part by fighting. Let us do ours by lending.

Hydro employees, like all responsible Canadian citizens, will welcome the opportunity of expressing confidence, in a very tangible manner, in overwhelming victory. By over-subscribing the Fifth Victory Loan we can "Speed The Victory" and make "unconditional surrender" an actual fact!

**L**END to put wings on the victory "V". The "V" is no longer just a symbol of hope. It is a symbol of smashing and complete victory. Speed it up. Give it wings by your purchase of Fifth Victory Loan bonds. Every bond bought now is a forward step and brings the return of our loved ones just that much closer.



## HANDMAIDEN OF HEALING

*(Continued from previous page)*

Webster, W. J. Wilson, J. Spence, S. G. F. Barton, John Ferguson, and S. M. Hay.

### First Used House

These doctors first commenced operation on Euclid Avenue in a house which was remodeled to suit their needs. Soon these quarters became overcrowded and several other houses were added. As demands on the accommodation again became greater it was decided that a permanent site and proper buildings must be erected.

In 1899 a large house on the present Bathurst Street site was purchased and made over for hospital purposes. Here again accommodation became overcrowded and it was found necessary to erect tents which were used for several years.

Two solid brick buildings were erected in 1908 and 1910 giving the hospital its first structures erected for the sole purpose of providing accommodation for the sick. While these events were going on the hospital succeeded in purchasing the land to the south of the building and a portion of the land on the northern part of the lot which completed the present site of the hospital.

In 1911 and 1913 the main building facing Bathurst Street was erected and in the latter year arrangements were made with the University of Toronto for the admission of medical students to the public wards of the hospital. The Toronto Western and Grace Hospitals were united by special act of the Legislature in 1925, and when it became

apparent that the Grace hospital building was no longer suitable for the uses of a hospital the need for additional accommodation became acute. It was this situation, in 1935, which prompted the erection of the modern skyscraper pavilion and the addition of a fourth storey to the Bathurst Street building.

### Toronto Landmark

From its site on Roseberry Avenue, this architecturally simple but majestic edifice rises to a commanding eminence. On passing through its tall, stately portals one is conscious of that quiet, orderly, efficiency, which endows a hospital with an atmosphere which is at once mysterious and impressive. This atmosphere is further accentuated as one passes through polished corridors and catches fleeting glimpses of test-tubes, X-rays, and gleaming arrays of surgical apparatus. Pleasing, soft-footed nurses swish by—some flash friendly smiles—as you proceed on your way.

You round a bend and find an interne hastening toward a room, a stethoscope protruding from his white jacket pocket. He nods to you without stopping. Everywhere in this magnificent institution the visitor is conscious of a spirit of friendly cheerful courtesy. This spirit seems to find mute but warm expression in every room.

The unfailing courtesy and close co-operation extended to Hydro News by officials, doctors, nurses, technicians, and other personnel made it possible to obtain an enlightening and intimate insight into the unfailing service which is being rendered by the Toronto Western Hospital in the alleviation of human suffering.





# MEETS AT KITCHENER



A feature of the convention of District No. 6, O.M.E.A., was an inspection trip of the C.W.A.C. basic training centre, Kitchener. Above is shown a small section of the party swinging in full stride across the parade grounds of the camp.

**"I**F we are to maintain financial stability in the uncertain period facing us in post-war days, we must build up our reserves now."

This was the keynote of an address by R. T. Jeffery, chief municipal engineer, H.E.P.C., before the recent meeting of District No. 6, Ontario Municipal Electric Association.

Referring to power demands being made on The Hydro-Electric Power Commission, Mr. Jeffery pointed out that in December, 1938, the total load served in Southern Ontario was 1,326,000 horsepower. With the outbreak of war in 1939, load growth leaped ahead tremendously until by December, 1942, it had reached 1,958,000 horsepower. By the end of the present year, Mr. Jeffery estimated, the total load to be supplied by the Commission may reach 2,030,000 horsepower.

"Our present total capacity," he continued, "is 2,043,000 horsepower, while the total reduction due to wartime controls is in the neighbourhood of 250,000 horsepower. But when the war ends, these huge war loads will fall off, and we cannot predict how long it will be before new peace-time industries come along to use up the vast quantities of electric

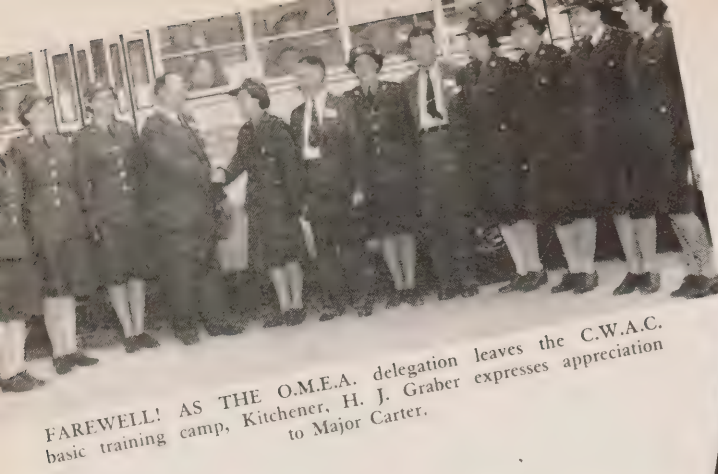
power we will have on hand. This is our biggest post-war problem."

The convention was one of the most outstanding meetings in the history of District No. 6, when delegates from some 30 municipalities gathered at the Walper Hotel, Kitchener, on September 16. Following a cordial welcome to the city by Mayor Joseph Meinzinger, the meeting turned its attention to a programme crowded with important business and varied activities.

## Important Business Discussed

The business session was under the chairmanship of H. O. Hawke, district president, and many matters of interest were discussed. A resolution was passed in which District No. 6, O.M.E.A., expressed itself as being "unalterably opposed to the recent amendment to Part II of the first schedule of the Unemployment Insurance Act whereby employees of public utilities, notwithstanding the fact that said public utilities are owned and operated by the municipality and have previously been defined as a municipal authority, are now included as being insurable under the Act."





FAREWELL! AS THE O.M.E.A. delegation leaves the C.W.A.C. basic training camp, Kitchener, H. J. Graber expresses appreciation to Major Carter.



ABOVE ARE THE banquet hosts to District No. 6 O.M.E.A. Left to right, A. M. Bitzer, commissioner; Mayor Joseph Meinzing; George W. Gordon, commissioner; Stuart Preston, P.U.C. staff; H. J. Graber, chairman; E. E. Ratz, commissioner; and Oscar Thal, manager.



"IT'S THE REAL thing!", says Garnet A. Edwards. Windsor, as he samples hot soup in one of the C.W.A.C. kitchens. Other delegates look on.

It was considered that permanent employees of a public utility who are included in the Municipal Hydro-Electric Pension and Insurance Plan should be designated as excepted employees under the Act and classified in the same manner as other permanent employees of the municipal corporation who are now considered as being engaged in excepted employment.

The election of executive officers resulted in the following being chosen to lead the district during the coming term of office:

President, F. H. May, St. Marys; vice-president, F. E. Welker, St. Jacobs; directors: George Eifert, Tavistock; George W. Gordon, Kitchener; W. P. Kress, Waterloo; secretary-treasurer, William McKee, St. Marys.

The constitution of District No. 6 was amended to make the immediate past-president a member of the district executive. Under this amendment the retiring president, Mr. Hawke, joins the newly elected officers.

The report of the secretary-treasurer showed the books to be in such good order that District No. 6 will charge no membership fees for the year 1944.

K. A. Christie, K.C., president of the O.M.E.A., addressed the meeting briefly. He referred to the Kitchener-Waterloo area as the place where the groundwork was laid for Ontario's great public ownership enterprise and felt it was particularly fitting that the city of Kitchener should be the locale of this important district meeting. Lauding the pioneering spirit of those far-seeing men who turned an idea into a living reality, Mr. Christie added, "You should not cease to pioneer in Hydro. It is not static and its greatness will increase with the passing of time." He complimented District No. 6 on its contribution to the welfare and continued success of Hydro.

Some interesting figures were presented by Mr. Jeffery during his address to the delegates. He stated that of the 33 municipalities comprising District No. 6, O.M.E.A., 14 have no debenture debts whatsoever; 16 have sufficient reserve funds to retire outstanding debt charges, and only three have not sufficient funds at the present time to take care of debt charges against their local system.

Turning to the subject of rural electrical service, Mr. Jeffery expressed the opinion that rural expansion will be





THIS FOURSOME WAS engrossed in solemn meditation when the photographer's camera clicked. Left to right, they are: C. B. Barbour, Wellesley; F. E. Welker, St. Jacobs; George Eifert, Tavistock; and W. H. Gleiser, Waterloo.

CAUGHT IN ANIMATED discussion during the convention were A. E. Willard, and H. O. Hawke, of Galt, and James Jaimet of Kitchener



A CROSS-SECTION OF the gathering observing convention proceedings. One of the largest meetings in the history of District No. 6 O.M.E.A., it attracted delegates from some 30 municipalities.

ON THE WINGS of song! Professor W. C. Blackwood, O.A.C. Guelph, vigorously demonstrates his point. Included in the picture are George Austin, Dundas; W. Ross Strike, Bowmanville; A. M. Bitzer, Toronto; and George Kitchener; K. A. Christie, Toronto; and George W. Gordon, Kitchener.



one of Hydro's major tasks in the days following the present war. He said it will be the job of municipalities to show farmers how Hydro power can lighten their daily tasks. "Farmers are practical, conservative people," Mr. Jeffery continued, "and they want to see new methods and labour-saving devices working successfully before they will adopt them. They must be shown how electric power can help them in their day-to-day operations."

Mr. Jeffery mentioned wartime restrictions on new rural primary line construction, stating that the Commission was acting on instructions of the Dominion Power and Metals Controllers, who curtailed the use of vital materials in the interests of the war effort.

With forty million dollars invested in rural lines and equipment in Ontario, he stated that the Commission now has 20,000 miles of primary line, bringing service to 135,000 rural consumers, of whom 63,000 are farmers, while the total rural load approximates 100,000 horsepower.

#### Interesting Side Trips

Variety was the order of the day, and convention dele-

gates enjoyed a well-balanced programme of business and recreation. They were pleasantly surprised to find a number of interesting side trips in store for them during the course of the day, under the genial direction of Oscar Thal, general manager of the Kitchener Public Utilities Commission, and Stuart Preston of the P.U.C. staff.

Following the noon luncheon and business session at the Walper Hotel, three busses carried the delegates to one of the city's leading manufacturing plants for a tour of inspection. From this point the busses made their way to the Canadian Women's Army Corps grounds, where, by special arrangement with military authorities, the party was permitted to inspect this fine, well designed camp which is used for basic training purposes. Of particular interest to the visitors were the electrical facilities of the camp and the modern electrical installations in the camp kitchens, while a large, electric organ in the drill hall aroused considerable interest. A cordial reception was given the delegation by Major Carter, second-in-command of the camp,

(Continued on page 17)



# HYDRO Harvest



**I**T'S EASY to take toil, sweat and backaches when they help produce a bountiful victory harvest.

This was the opinion of enthusiastic Hydro victory gardeners whose "fruits of victory" provided a colorful and impressive display at the annual fall flower and vegetable show this year conducted under the direction of The Horticultural Club of which William H. Carr is president. The show was held in the auditorium of the H.E.P.C. and included a display of home canning and preserving.

For Adam Smith, the enterprising and untiring chairman of the campaign, and all the members of his committee, the display of fine vegetables, fruits and canned products was a fitting climax to a job well done. At the same time, it reflected the wholehearted response of Hydro employees who really "got down to earth" when the campaign was launched.

The committee members who inaugurated, maintained and completed the successful venture are: Adam Smith, chairman; A. H. Sharpe, vice-chairman; W. H. Carr, A. B. Hayman, H. R. Hill, W. R. Harmer, J. J. Traill, J. F. MacLaren, R. H. Starr, John MacLellan and Misses E. L. Muir and Dorothy Powell.

Some exhibits on view were flown from the valley of the Albany river, north of the 50th parallel, while many

other remote points\* including Abitibi Canyon, Hunta, Kirkland Lake, Ramore, Timmins, Ear Falls, Crow river, Hailstone Lake, Red Lake and Slate Falls were represented, thus bringing to the fore the close co-operation and friendly spirit between head and field offices.

Throughout the Province there were 745 victory gardens, of which 447 were in the Toronto district. Altogether in the harvest fair there were 268 entries, divided into approximately 80 classes. Produce harvested by Hydro's Victory Gardeners is reported to be in excess of 75 tons, with a monetary value of \$21,000.

In the vegetable section the principal prize winners were: C. L. McKinnon, Toronto, three "firsts"; Osborne Mitchell, Streetsville, two "firsts" and one "second"; and R. C. McMordie, Toronto, two "firsts" and one "second." For the flowers, Miss Etta Johnson, Toronto, took six "firsts" and five "seconds"; W. H. Carr, Toronto, three "firsts" and three "seconds"; and A. H. Frampton, Toronto, one "first" and five "seconds". In the canning and preserving, Robert Boustead, Toronto, won two "firsts" and one "second"; and Miss Etta Johnson, one "first" and two "seconds."

Other prizes winners were: Vegetable section—A. Matheson, N. S. Haines, and C. J. Vick, two "firsts" each:

*(Continued on page 22)*





THIS IS A group of "first" prizes in the flower section. The large basket was entered by Osborne Mitchell, secretary, H.E.P.C., and the one directly in front by C. J. Vick, H.E.P.C.



THIS VEGETABLE EXHIBIT was sent in by victory gardeners from the northern hinterlands of Ontario.



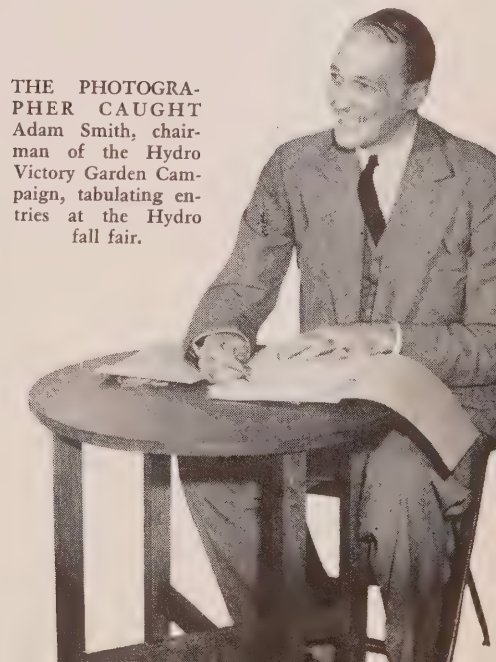
A PRIZE VEGETABLE marrow captures the interest of Dr. T. H. Hogg, chairman and chief engineer, Osborne Mitchell, secretary, and G. H. Challies, commissioner, H.E.P.C.



THE HOME CANNING and preserving section was well represented. J. A. Blay, George H. of the Ontario Agricultural Department, E. L. Muir, H. R. Hill and W. R. Har... H.E.P.C., look over some of the exhibits.



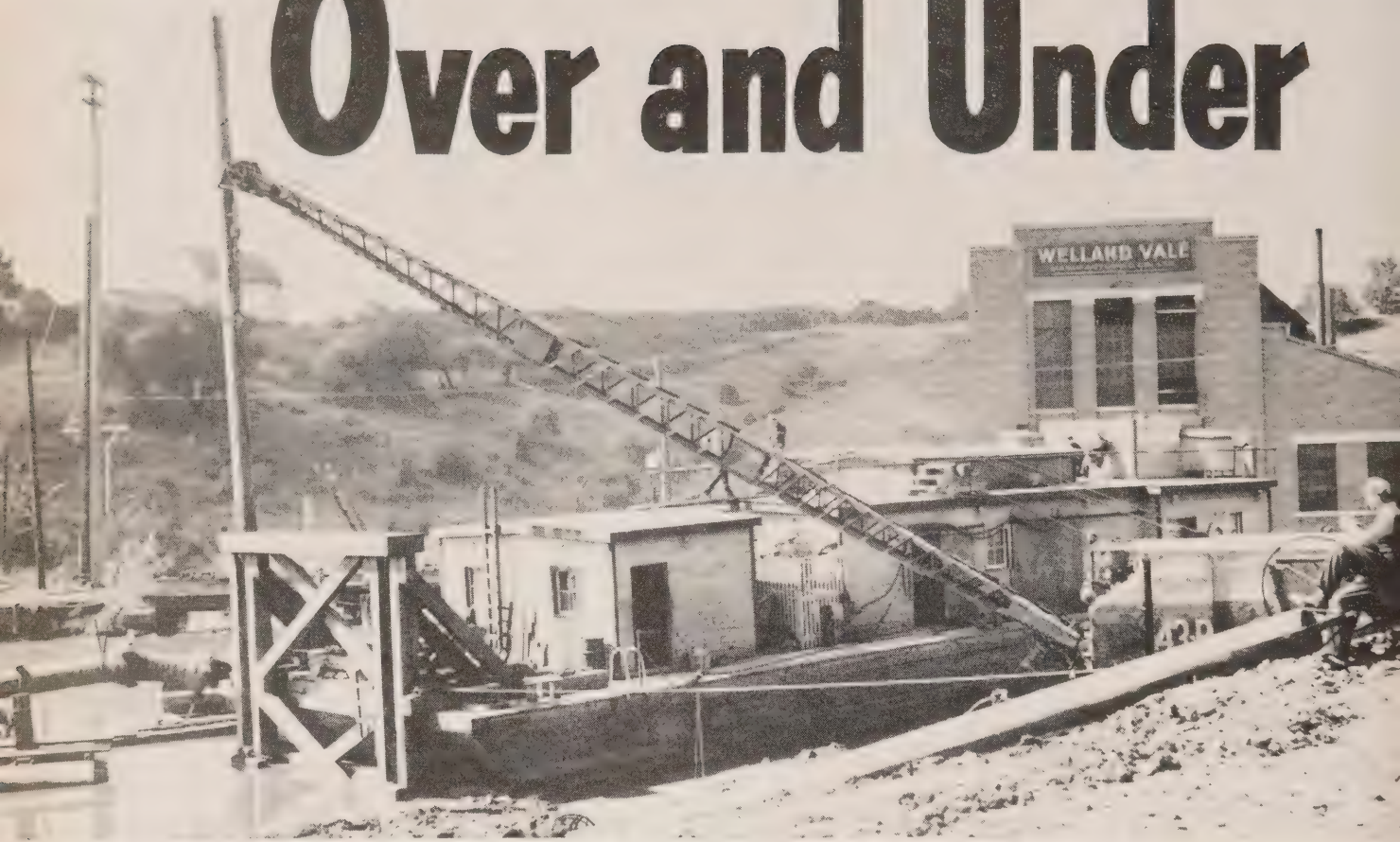
THIS ILLUSTRATION SHOWS another vegetable display sent in from Northern Ontario.



THE PHOTOGRAPHER CAUGHT Adam Smith, chairman of the Hydro Victory Garden Campaign, tabulating entries at the Hydro fall fair.



# Over and Under



THE UPPER PART of the cabin on the dredge has been removed and the "spuds" are being taken off with a crane before the dredge is locked through the first upper cofferdam.

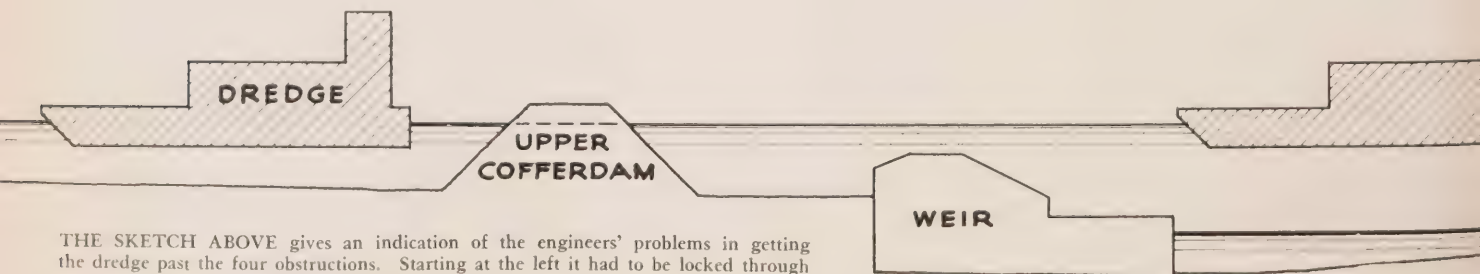
**T**HIS is the story of an enterprising venture on the part of engineers of the Canadian Dredge and Dock Company and the Hydro who without waving any magic wand, caused a heavy ungainly dredge to pass through a cofferdam, over a weir, duck under a low bridge, and through another cofferdam and thus effect an important saving of both time and money.

The dredge was known simply as "No. 3". She had been constructed on the Twelve Mile Creek just below the new DeCew Falls power house.

After dredging the creek channel wider, deeper and

more nearly straight, to take care of the additional water now being released through the new DeCew Falls plant, an impasse was met when it reached Welland Vale. Here engineers were confronted with the problem of getting the dredge past a series of obstructions and a drop of ten feet in order to continue dredging on the lower reaches of the creek which in this section had formed a part of the old Welland canal system.

To dismantle the dredge completely and reconstruct it on the downstream side of the obstructions would have required months of labour and meanwhile operation of the



THE SKETCH ABOVE gives an indication of the engineers' problems in getting the dredge past the four obstructions. Starting at the left it had to be locked through



plant at DeCew Falls would have been restricted.

### Careful Research

Careful research work by the engineers revealed that by removing some easily accessible parts and shearing off the top part of the cabin the dredge would pass under the highway bridge with a few inches to spare after the water level had been lowered twenty-two feet.

As soon as dredging operations were completed upstream from Welland Vale the engineers went to work. Some equipment was stripped from the dredge and moved downstream as well as the upper part of the cabin. The lower cofferdam had already been raised some ten feet to enable locking the dredge through the upper cofferdam.

Now the upper dam was breached and the dredge floated across the weir, which will regulate the level of the water in the stream south of Welland Vale, and down into close proximity to the highway bridge. The upper dam was then temporarily replaced and the dredge put to work pumping the water from the basin now formed between the two cofferdams.

As the water level fell pontoons and other equipment were floated under the bridge and lifted over the lower cofferdam by a crane. Lines from the dredge winches were passed under the bridge and made fast to mooring anchors.

Slowly she edged her way under the bridge. Had either of the dams given away at this time the dredge might have been seriously damaged. The winches slowly inched the huge unwieldy machine through the narrow passage with only a few inches clearance top and bottom. At last it cleared the bridge and the engineers breathed a sigh of relief. They had saved a month of back-breaking labour and were already a day ahead of schedule in getting the dredge to work on the downstream side.

### Refill Basin

The basin was again filled with water to raise the dredge to the level of the lower reach and allow it to be locked through the lower cofferdam.

All that now remained was to break through this lower cofferdam on the downstream side of the highway bridge and float the dredge to the location of its next effort.

It is here that the Welland Vale Manufacturing Company is situated and from which the locality derives its name. It was this firm which manufactured the hay fork with which David MacLean, the Scottish farmer, captured Rudolph Hess, the "Mad Nazi".

For further illustrations of this article see next page.

## O.M.E.A. MEETS

(Continued from page 13)

and her efficient staff of assistants who led the visitors through the camp and explained its many features. At the conclusion of the visit, H. J. Graber, chairman of the Kitchener Public Utilities Commission, thanked Major Carter on behalf of the delegates and expressed warm appreciation for the hospitality received.

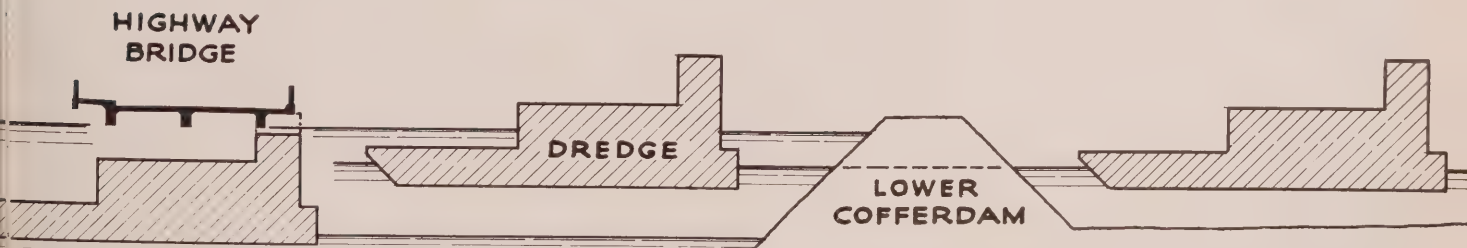
A pleasant sight-seeing tour of the Kitchener-Waterloo area rounded out the afternoon and the busses then carried the party to the Westmount Golf and Country Club for an evening banquet and entertainment as guests of the Kitchener Public Utilities Commission.

### Many Prominent Guests

Mr. Graber officiated at the banquet, while J. Albert Smith introduced the guest speaker of the evening, Professor W. C. Blackwood of the Ontario Agricultural College, Guelph. Using as his theme, "Vibrations", the Professor gave an instructive and entertaining talk on how vibrations enter into our daily lives and extended his remarks to the field of music where harmony is all-important in producing the most pleasant effect. He drew an analogy by picturing harmony among individuals as being the most desirable contribution to our personal happiness. Many amusing anecdotes were sprinkled throughout the address. Commissioner E. E. Ratz of the Kitchener Commission thanked the guest speaker for his inspiring and illuminating words to the convention delegates.

Also seated at the head table were K. A. Christie, K.C., O.M.E.A. president; Mayor Joseph Meinzinger of Kitchener; F. H. May, new president, District No. 6; W. Ross Strike, president, Eastern Ontario Municipal Electric Association; J. Albert Smith, former commissioner, H.E.P.C.; William Henderson, chairman, Waterloo P.U.C.; commissioners George W. Gordon, E. E. Ratz and A. M. Bitzer of the Kitchener P.U.C.; William Kress, Waterloo P.U.C. commissioner; R. T. Jeffery, chief municipal engineer, H.E.P.C.

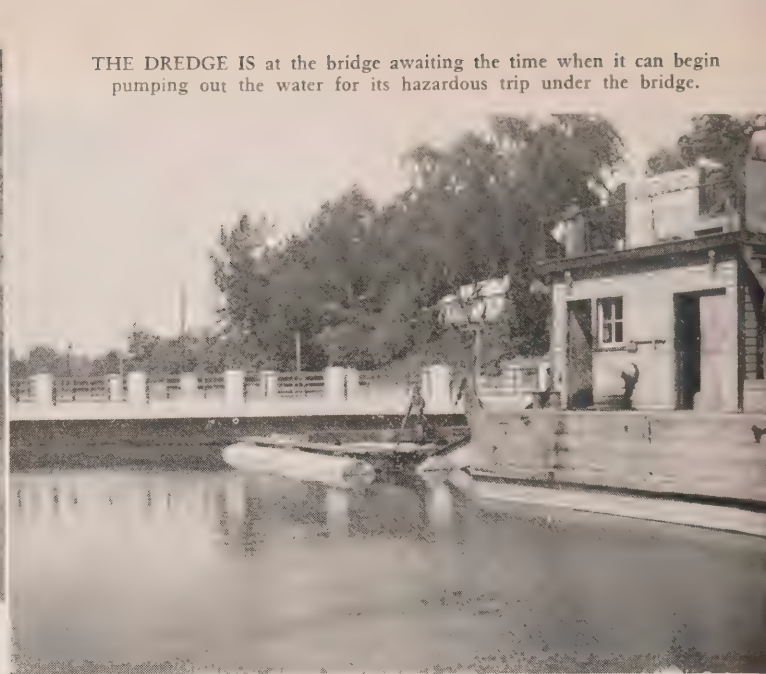
Other prominent guests included Garnet A. Edwards, president, District No. 8, O.M.E.A.; Albert Jennings, president, District No. 4; Miss Kathleen Ciceri, secretary-treasurer, O.M.E.A.; Mayor R. B. Robson of Guelph; Mayor R. K. Serviss of Galt; Mayor T. E. Henry of Stratford; G. C. Parker, H.E.P.C., and many others.



the first cofferdam and floated over the weir. Then the water had to be lowered so that it would pass under the highway bridge, and the water level raised again to lock it through the lower cofferdam.



THE UPPER COFFERDAM has been breached, the dredge floated through and down to the highway bridge. Now the dam is being rebuilt.



THE DREDGE IS at the bridge awaiting the time when it can begin pumping out the water for its hazardous trip under the bridge.



THIS IS THE dredge just halfway under the bridge. On the right, "she's made it."



THIS IS THE weir over which the dredge was floated. It will determine the level of the creek south of Welland Vale.



BELOW IS THE crane lifting pontoons over the lower cofferdam while the dredge is being slowly inched under the bridge.



# SCARBOROUGH BLUFFS



THE STAFF OF the Scarborough Public Utilities Commission are shown "hard at it." In the circle is an exterior view of the office on Kingston road.

**S**CARBOROUGH township in York county has a notable record of municipal achievement. Located on the shores of lake Ontario, adjacent to Toronto, it was named in 1793 by Mrs. Simcoe, wife of Colonel John Graves Simcoe, Lieutenant-Governor of Upper Canada, because of the resemblance of the shore line to the Scarborough cliffs in England. Settlement began shortly after, and this section is now recognized as one of the oldest populated centres in Western Ontario.

Approaching Scarborough from lake Ontario, one cannot fail to be impressed by the boldness of the shore line as compared with the rest of the coast, both east and west of this township. The cliffs, or heights, as they are sometimes called, consist of boulder-clay and sand and form somewhat irregular strata. This rock formation dates back to the glacial period, which has been studied to a great extent in this particular locality.

Hydro had its inception in this enterprising municipality of 19,000 inhabitants in 1916 under the name of the Scarborough Hydro-Electric System. Four years later it was decided to combine the Hydro with the waterworks system, and a public utilities commission was formed, with George Green as manager.

When Hydro current was first turned on, only 74 customers had signed contracts. Today, there are 5,552 domestic, 371 commercial and 38 power services. The maximum peak for 1942 was 4,800 horsepower. This load would no doubt have been considerably greater but for the fine co-operation on the part of consumers in their efforts to conserve power for essential war needs.

In 1921, the average domestic rate in this municipality was 4.5 cents per kilowatt-hour. This figure has gradually been reduced, until now it is 1.6 cents.

The principal industries in this urban area, which are now largely engaged in war work, include Canadian Line Materials Limited, Metal Stampings Limited, Precision Tools Limited, and a branch of Research Enterprise. Although many of these companies' products are on the "secret list," they also make pole line hardware, electrical construction equipment, motor generator sets, field testing outfits and various types of machine shop products.

Hydro supplies the power for these industries over a network of approximately 100 miles of transmission lines, which is distributed through four substations.

Sound financing, which has been characteristic of the

*(Continued on page 23)*



# Around the Hydro Circuit

## H.E.P.C. COMMISSIONER

**HON. GEORGE H. CHALLIES**, newly appointed member of The Hydro-Electric Power Commission of Ontario, has had a long and distinguished career in business and public life. Born in 1884 at Winchester, Ontario, where he obtained his early education, Mr. Challies later attended Woodstock College and the University of Toronto, graduating with the degree of Phm.B. In the intervening years he has occupied posts of great responsibility in the public service.



Mr. Challies' career in public life began with his election as reeve of Morrisburg and he has been a member of the Ontario Legislature continuously since 1929, when he was elected to represent the constituency of Dundas. His ability as an administrator was soon recognized when, in 1931, he was made provincial

secretary, a portfolio he held until 1934. Upon his return to the Legislature recently as member for Grenville-Dundas, Mr. Challies was again called into the Cabinet as Minister without Portfolio and appointed hydro commissioner.

A close student of Hydro for many years, dating back to his contact with Sir Adam Beck when the fight for "power at cost" was in its infancy, Mr. Challies became known in the Legislature as one of the leading figures on Hydro affairs. As a young man he was chosen by the Waterpowers Branch at Ottawa to aid in the design and construction of a scale model of the Winnipeg water power area, and in 1915 he was commissioned to build, for the Pan-American Exposition, a series of models showing typical water power plants across Canada and a map in perspective showing developed and undeveloped sites.

Mr. Challies has always exercised a particular interest in the power requirements of Eastern Ontario and for many years has been active in the Eastern Ontario Power Union and the O.M.E.A. He also takes an active part in church and fraternal society affairs in his home town of Morrisburg.

Hydro's new commissioner brings with him a wealth of experience in public service, but finds his greatest enjoyment in matters relating to his foremost "hobby"—Hydro in Ontario.

## CONVENTION DATES

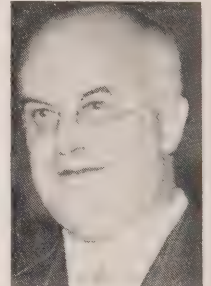
O.M.E.A. District No. 5 (Niagara) will hold its second meeting of the year in Paris on October 13, while District No. 8 (Western) convention will be during the last week of October at Windsor.

## SCARBOROUGH REEVE

**BURTON L. CLUTTERBUCK**, reeve of Scarborough Township and commissioner of Scarborough Public Utilities Commission, was born in Smeeth, County Kent, England.

Following his education at Chiswick and Bedford Poly-technical School, he came to this country, and for the past 28 years has been an accountant with the Bond Engineering Company.

Municipal affairs occupy a prominent place in Mr. Clutterbuck's agenda. He was a member of the Scarborough Council from 1936 to 1938, and for the past five years has been reeve.



As a young man, he played cricket for St. Nicholas' Choir. Now his hobbies are fishing and gardening, having been president of the Scarborough Horticultural Society for ten years.

## CHAIRMAN AT SCARBOROUGH

**JOHN ALEXANDER LESLIE**, chairman, who has been on the Scarborough Public Utilities Commission for eight years, was born in Toronto in 1896. He received his education in Toronto, attending Malvern Collegiate.

Being particularly interested in municipal affairs, Mr. Leslie was a member of the Scarborough council for two years and deputy reeve in 1930 and 1931.

He has always taken an active part in sports and has sponsored a men's senior softball league for several years. At the present time he is honorary vice-president of the Dentonia Park Softball League.

Mr. Leslie is sales manager of the Supertest Petroleum Corporation, Toronto Division.



## NEW PRESIDENT

**F. H. MAY**, chairman of the St. Marys Public Utilities Commission, was elected president of District No. 6, O.M.E.A., at the recent meeting of the organization in Kitchener.

Mr. May was elected to the St. Marys commission in 1927 and in 1932 he was made chairman, a position he has occupied continuously since that time. In 1940 he was appointed to the executive of District No. 6, O.M.E.A. and later named a director of the Association. During the past year he served as vice-president of the district body.





# Around the Hydro Circuit

## EIGHTEEN YEARS' SERVICE

**RONALD HARRISON**, energetic manager and secretary-treasurer of the Scarborough Public Utilities Commission, was born in Toronto in 1897.



Receiving his education in Toronto, he graduated with honours as a Bachelor of Applied Science from the University of Toronto. The first two years of his Hydro career were spent in the hydraulic department of The Hydro-Electric Power Commission of Ontario. From there, in 1926, he went to the Scarborough Public Utilities Commission as manager, and for the past nine years has taken on the added duties of secretary-treasurer.

During the last war, he served overseas with the C.E.F., Canadian Engineers (signals).

Mr. Harrison is keenly interested in community affairs, sports and gardening.

## SCARBOROUGH COMMISSIONER

**JOHN BROWN**, born in England in 1883, has been on the Scarborough Public Utilities Commission for nine years, and on alternate years has been its chairman. He was secretary-treasurer for six years and a school trustee from 1928 to 1935.

Mr. Brown is devoted to sports, but his main hobby is fishing. He is in the lithographing business.



## KILLED OVERSEAS

**SGT. OBSERVER GEORGE E. BISHEFF**, a former employee of the electrical engineering department, previously reported missing on active service, is now presumed dead. A graduate of Mimico High School, where he was prominent in student body affairs, the 22-year old airman had been on many operational flights over enemy territory.

## QUARTER CENTURY CLUB BANQUET

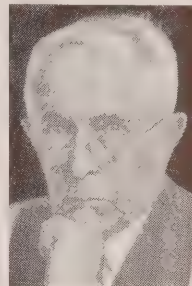
**A**N interesting feature of this year's Quarter Century Club banquet will be the presence of a father and son, whose combined record of Hydro service totals 49 years. The father, Cyrus Flommerfelt, will receive his gold button at the dinner, indicating the completion of twenty-five years' service, while the son, C. S. Flommerfelt, would also have been given his button had it not been for the fact that he left the Commission's employ for a while.

In announcing this year's dinner, which will be held at the King Edward Hotel, Toronto, on October 22, S. L. Eisenhofer, secretary of the club, has made an appeal to all members to return invitation cards promptly.

**EUGENE P. CHAMBERLIN**, who joined the Commission's staff in 1913, has retired from active duties in the electrical engineering department, distribution section.

In 1918 Mr. Chamberlin became assistant engineer, designing and supervising the construction of rural power lines, and in recent years he acted as district engineer for the distribution section in the London, St. Thomas and Woodstock areas.

On September first of this year "Gene's" associates presented him with an engraved watch, wishing him health and happiness for many years to come. In his leisure hours he will have an opportunity to add to his laurels as a lawn bowler.



**GEORGE A. SAUNDERS**, electrical engineering department, has retired from the Commission's staff after 32 years' service. Coming to the H.E.P.C. in 1911 as a station design engineer, and later in charge of the drafting office, station section, Mr. Saunders was appointed district engineer for Niagara system stations. Up to the time of his retirement on August 31, he was responsible for distribution station design.

Before being engaged by the Commission, Mr. Saunders, a graduate of the University of Toronto, had served with the General Electric Company, Schenectady; the Westinghouse Electric and Manufacturing Company, Pittsburgh; and the Toronto Hydro-Electric System.

The occasion of his retirement was suitably marked by a gathering of the staff of the electrical engineering department and the presentation of an easy chair for his comfort and relaxation in future years.



## DISTRICT NO. 2 OFFICERS

**H**ERE are the officers elected at the Owen Sound O.M.E.A. convention, which was inadvertently omitted in the September issue of Hydro News: honorary president, Alfred Menary, Grand Valley; president, R. D. Boyes, Alliston; first vice-president, R. J. Beaulieu, Penetanguishene; second vice-president, W. V. Brown, Meaford; directors, G. F. Hutcheson, Huntsville; Walter Dixon, Arthur; C. J. Halliday, Chesley; and W. G. Case, Owen Sound. Three new members were elected to the directorate. They are Charles Hewitt of Kincardine; D. L. Regimbal of North Bay; and W. E. Theaker of Paisley. The three retiring directors are Dr. J. Marcus, Kincardine; David Hurrie, Midland; and J. A. Logie, Paisley.



**J**UST about four weeks left in which to do your Christmas shopping and mailing! November First is the deadline!

By that date parcels should be en route to the boys overseas. A box from their "ain folk" is all-important to the soldiers, sailors and airmen who are far away from home at the season when they—just as you—will be recalling the significance of that first Christmas Day and rededicating themselves to the task of hastening Peace on Earth to Men of Goodwill.

If you are uncertain as to the new address of a man or woman in the fighting services, use the last known address in England. Boxes which are properly addressed are reaching the men and women on the war fronts in record time.

A man's location, however, has an important bearing upon the contents of a parcel for it has been reported that homemade cookies and cakes are mouldy by the time they reach the Mediterranean area and India. We, therefore, suggest that if you are planning to send food do so only if it is in the form of vacuum canned products which will reach their destination without spoiling.

A good policy is to include gifts the boys will really appreciate. For instance, a picture of the family, a good book, a new song book, toilet articles or underclothes are always welcomed. Then, of course, men and nurses in hot climates are glad to get lotions for sunburn, insect bites and tired feet. But remember, the latter gifts must not be sent in glass containers.

Boxes to members of the fighting forces go duty free, but each article in the parcel must be carefully described on the customs' label.

Eleven pounds is the limit for a box going to any member of the Allied forces overseas with the exception of the Americans. The postage rate is 12 cents per pound. Parcels, weighing 20 pounds, may be sent to the C.A.S.F. on duty in the West Indies or Newfoundland, the rate being 12 cents per pound. Boxes to Allied forces stationed in Canada may be mailed for 12 cents per pound if the weight is 11 pounds or under, the civilian rate of 24 cents per pound is charged for parcels, from 12 to 20 pounds, sent to Allied forces in this Dominion.

It is suggested that you cross out the word "abandon" on the declaration form and name the officer commanding the particular unit as an alternative addressee. Parcels to members of the fighting forces cannot be insured but those to British civilians can be covered. The latter parcels should be marked "Gifts." And, by the way, it is well to remember that two pounds is the total weight of any one food-stuff which can be sent to a civilian.

Here are a few suggestions for those who are making up Christmas boxes for overseas mailing:

Suggestions for a British civilian (packaged weight not over 5 lbs.)

2 lbs. fancy biscuits	36 ozs.
1 lb. fruit cake	18 ozs.
½ lb. package cheese	9 ozs.
Large pkg. bouillion	24 ozs.
Small tin soup	6 ozs.
Dehydrated vegetables	5 ozs.
Small box soda biscuits	11 ozs.
Small pkg. hot chocolate	1 oz.
Small tin chicken	20 ozs.

(WEIGHTS GIVEN INCLUDE CONTAINERS AS WELL AS CONTENTS)

Suggested parcel for a nurse (about 2 lbs.)

- 2 pkgs. hairpins
- 1 pkg. cleansing tissues
- 1 cake toilet soap
- 1 wash cloth
- 1 tooth brush
- 1 tooth powder (small)
- 1 pad and pkg. envelopes

Suggested parcel for a man in the Navy (about 3 lbs.)

- 2 blue handkerchiefs
- 1 pair socks
- 1 deck cards
- 1 book (.39c)
- 6 chocolate bars
- 2 pkgs. Lifesavers
- 2 pkgs. gum

Suggested parcel for a man in the Army or Air Force (about 5 lbs.)

- 1 lb. fruit cake
- 3 pkgs. hot chocolate
- 6 chocolate bars
- 1 tin humbugs
- 1 pkg. nuts
- 1 shaving stick
- 1 pkg. razor blades
- 3 pkgs. flints
- 3 handkerchiefs

## HYDRO HARVEST

(Continued from page 14)

J. M. Broughton, one "first" and one "second"; Robert Boustead, G. A. Honsberger, J. F. MacLaren and T. J. Brant, one "first" each; Miss Etta Johnson, four "seconds"; A. H. Frampton and Adam Smith, two "seconds" each; R. J. Gordon, H. L. Wagner, E. V. Butt, William Barr and J. B. Tillie, one "second" each.

Flower section—J. F. MacLaren, three "firsts" and one "second"; H. L. Wagner, two "firsts"; J. E. Stark, one "first" and one "second"; C. J. Vick, one "first" and one "second"; Osborne Mitchell, A. Matheson, G. A. Honsberger, and Miss E. A. Younger, one "first" each; Miss Marjorie Petrie, Miss Margaret Leworthy, Jack Thompson, J. C. Murton and Miss Zaida Cummings, one "second" each.

Canning and Preserving—A. H. Frampton, one "first" and one "second"; E. V. Butt, one "first" and one "second"; Miss Beatrice Fletcher, one "first" and one "second"; C. L. McKinnon, Miss Margaret Leworthy, Osborne Mitchell, Miss Anne Allan, Mrs. J. A. Mackay and N. S. Haines, one "first" each; Mrs. T. E. Dietrich, two "seconds."



## AUGUST LOAD FIGURES

**L**OAD figures for the month of August, 1943, are recorded below.

Based on the maximum 20-minute peak horsepower load for the period, the summary portrays load conditions on all four Hydro systems and the Northern Ontario Properties.

Complete load tabulations for the above period and for the corresponding month of last year are as follows:

### PRIMARY AND SECONDARY LOADS

	Maximum 20-Minute Peak H.P.		Per Cent
	August, 1943	August, 1942	Increase
Niagara System .....	1,677,346	1,602,949	4.6
Georgian Bay System .....	56,616	50,266	12.6
Eastern Ontario System .....	201,807	175,965	14.7
Thunder Bay System .....	124,611	99,598	25.1
Northern Ontario Properties .....	232,495	220,353	5.5
Total All Systems .....	2,292,875	2,149,131	6.7

### A.M.E.U. CONFERENCE

At the fall conference of the Accounting and Office Administration Committee for Western Ontario Division, A.M.E.U., to be held in the Hotel London, London, on Tuesday, October 19, the following subjects will be discussed: Pension and Insurance Scheme; Meter Reading; Consumers' Deposits; and Collection of Outstanding Accounts from Consumers who have moved to other municipalities. Delegates are asked to come prepared with questions on the above subjects.

### SCARBOROUGH BLUFFS

(Continued from page 19)

utilities since its inauguration, has resulted in Scarborough's enviable economic position. At present there is a total indebtedness of \$52,380, which will be paid off in 1949, while a large part of the reserve funds are invested in victory bonds.

Scarborough has a somewhat unique waterworks system in that it is 180 feet above lake level. The site, on the lake front at the foot of Kennedy road, while exceptionally well adapted for waterworks purposes, is very picturesque and affords a magnificent view of the lake and surrounding country. Energy for the water system pumps is supplied by the local Hydro Commission. The water is distributed through a comprehensive system of pipe lines throughout the area.

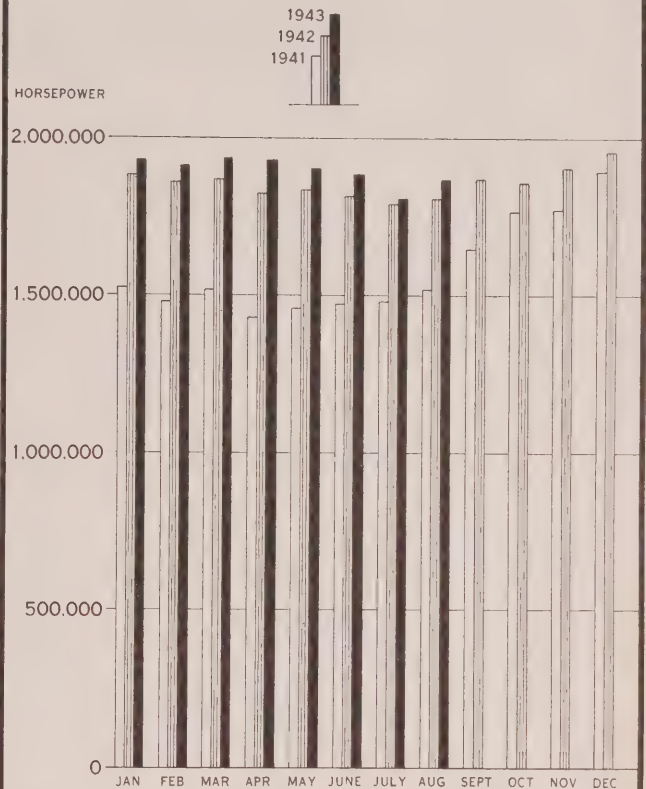
One of the principal features of this particular township is that it is a first class farming area and its scenic beauty spreads out for eleven miles along the lake front.

The affairs of the Scarborough Public Utilities Commission are efficiently taken care of by John A. Leslie, chairman; John Brown and Reeve B. L. Clutterbuck, commissioners; and Ronald Harrison, manager.

In conversation with Hydro News, Mr. Harrison remarked that the success of the utilities is in large part due to the co-operation, loyalty and harmonious atmosphere of the commission and staff. It is interesting to note, in passing, that the present six members of the Hydro construction staff have completed 120 years' service. This fine record speaks for itself in the rendering of efficient service to its consumers.

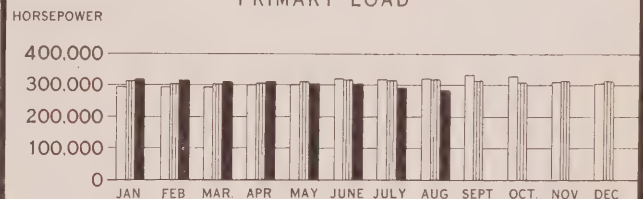
### SOUTHERN ONTARIO SYSTEMS NIAGARA — GEORGIAN BAY — EASTERN ONTARIO

#### PRIMARY LOAD



### NORTHERN ONTARIO PROPERTIES AND THUNDER BAY SYSTEM

#### PRIMARY LOAD



#### PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	AUG. 1943	AUG. 1942	
NIAGARA SYSTEM .....	1,611,662	1,579,088	+ 2.1
GEORGIAN BAY SYSTEM .....	56,295	50,266	+ 12.0
EASTERN ONTARIO SYSTEM .....	201,807	175,965	+ 14.7
THUNDER BAY SYSTEM .....	100,214	99,598	+ 0.6
NORTHERN ONTARIO PROPERTIES .....	184,372	220,353	- 16.3
TOTAL .....	2,154,350	2,125,270	+ 1.4

# MUNICIPAL LOADS, JULY, 1943

NIAGARA SYSTEM (25-Cycle)			Popula- tion		Popula- tion			
	H.P.	Popula- tion		H.P.		H.P.	Popula- tion	
Acton	1,591	1,903	Erie Beach	33	21	Palmerston	547	1,400
Agincourt	224	P.V.	Essex	543	1,886	Paris	1,591	4,604
Ailsa Craig	151	487	Etobicoke Twp.	6,120	V.A.	Parkhill	203	1,029
Alvinston	90	649	Exeter	792	1,654	Petrolia	900	2,768
Amherstburg	879	2,704	Fergus	1,313	2,759	Plattsville	135	P.V.
Ancaster Twp.	344	V.A.	Fonthill	149	860	Point Edward	1,591	1,199
Arkona	55	403	Forest	559	1,562	Port Colborne	2,080	6,928
Aurora	1,362	2,821	Forest Hill	3,989	12,172	Port Credit	775	1,934
Aylmer	933	1,985	Galt	9,725	15,126	Port Dalhousie	1,200	1,599
Ayr	217	760	Georgetown	1,789	2,452	Port Dover	494	1,790
Baden	494	P.V.	Glencoe	177	763	Port Rowan	80	700
Beachville	729	P.V.	Goderich	1,809	4,674	Port Stanley	1,170	824
Beamsville	441	1,227	Granton	68	P.V.	Preston	3,783	6,656
Belle River	165	836	Grimsby	839	1,988	Princeton	144	P.V.
Blenheim	446	1,873	Guelph	9,716	23,074	Queenston	136	P.V.
Blyth	141	662	Hagersville	1,196	1,524	Richmond Hill	444	1,295
Bolton	244	629	Harriston	493	1,292	Ridgetown	474	1,986
Bothwell	113	683	Harrow	537	1,092	Riverside	919	5,235
Brampton	2,454	5,975	Hensall	187	686	Rockwood	131	P.V.
Brantford	19,307	31,622	Hespeler	2,460	2,938	Rodney	121	758
Brantford Twp.	1,039	V.A.	Highgate	91	322	St. Clair Beach	95	138
Bridgeport	142	P.V.	Humberstone	502	2,831	St. George	143	P.V.
Brigden	77	P.V.	Ingersoll	3,001	5,757	St. Jacobs	294	P.V.
Brussels	145	784	Jarvis	183	513	St. Marys	1,593	4,009
Burford	285	P.V.	Kingsville	488	2,453	St. Thomas	6,812	17,045
Burgessville	49	P.V.	Kitchener	23,098	35,456	Sarnia	9,607	18,599
Burlington	1,496	3,925	Lambeth	96	P.V.	Scarborough Twp.	3,988	V.A.
Burlington Beach	412	1,474	LaSalle	232	907	Seaforth	783	1,782
Caledonia	283	1,430	Leamington	1,326	6,048	Simcoe	2,182	6,340
Campbellville	36	P.V.	Listowel	1,459	2,984	Smithville	190	P.V.
Cayuga	94	700	London	33,830	77,105	Springfield	68	382
Chatham	5,689	17,184	London Twp.	399	V.A.	Stamford Twp.	2,519	8,275
Chippawa	261	1,228	Long Branch	1,103	4,258	Stoney Creek	211	933
Clifford	99	491	Lucan	190	643	Stouffville	331	1,198
Clinton	686	1,879	Lynden	109	P.V.	Stratford	7,190	17,163
Comber	134	P.V.	Markham	404	1,175	Strathroy	1,528	2,834
Cottam	55	P.V.	Merlin	72	P.V.	Streetsville	233	701
Courtright	38	355	Merritton	11,346	2,916	Sutton	468	949
Dashwood	115	P.V.	Milton	1,411	1,915	Swansea	2,452	6,907
Delaware	75	P.V.	Milverton	385	994	Tavistock	687	1,080
Delhi	318	2,430	Mimico	2,294	7,987	Tecumseh	327	2,331
Dorchester	75	P.V.	Mitchell	749	1,670	Thamesford	215	P.V.
Drayton	153	528	Moorefield	45	P.V.	Thamesville	172	816
Dresden	368	1,525	Mount Brydges	96	P.V.	Thedford	104	598
Drumbo	115	P.V.	Newbury	30	288	Thorndale	103	P.V.
Dublin	64	P.V.	New Hamburg	586	1,441	Thorold	2,210	5,284
Dundas	2,505	5,245	Newmarket	1,839	3,800	Tilbury	1,347	1,923
Dunnville	1,115	3,916	New Toronto	10,812	9,469	Tillsonburg	1,146	4,602
Dutton	243	830	Niagara Falls	9,202	20,371	Toronto	297,004	657,612
East York Twp.	6,163	41,578	Niagara-on-the-Lake	1,027	1,764	Toronto Twp.	3,219	V.A.
Elmira	1,299	2,069	North York Twp.	8,463	V.A.	Wallaceburg	3,759	4,802
Elora	485	1,185	Norwich	403	1,301	Wardsville	26	221
Embro	142	420	Oil Springs	165	541	Waterdown	250	867
Erieau	160	281	Oterville	114	P.V.	Waterford	390	1,294
						Waterloo	5,136	8,968



# MUNICIPAL LOADS, JULY, 1943

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Watford	409	1,023	Neustadt	39	431	Lakefield	339	1,301
Welland	9,869	14,899	Orangeville	736	2,558	Lanark	75	686
Wellesley	135	P.V.	Owen Sound	5,577	13,559	Lancaster	35	570
West Lorne	199	768	Paisley	106	730	Lindsay	3,696	8,345
Weston	4,309	6,165	Penetanguishene	994	4,177	Madoc	179	1,130
Wheatley	181	761	Port Carling	316	520	Marmora	128	1,004
Windsor	44,874	104,415	Port Elgin	650	1,415	Martintown	34	P.V.
Woodbridge	653	946	Port McNicoll	87	950	Maxville	87	811
Woodstock	7,246	12,339	Port Perry	344	1,175	Millbrook	81	749
Wyoming	56	538	Priceville	10	P.V.	Morrisburg	294	1,484
York Twp.	16,239	77,175	Ripley	109	420	Napanee	1,329	3,241
Zurich	161	P.V.	Rosseau	48	305	Newcastle	162	701
(25 and 66-2/3 Cycle)			Shelburne	265	1,053	Norwood	122	710
Hamilton	135,259	164,719	Southampton	686	1,467	Omeme	189	630
St. Catharines	27,465	34,541	Stayner	307	1,106	Orono	80	P.V.
Trafalgar Twp.	616	V.A.	Sunderland	71	P.V.	Oshawa	15,933	26,610
(66-2/3 Cycle)			Tara	115	510	Ottawa	31,485	150,861
Bronte	162	P.V.	Teeswater	117	873	Perth	1,677	4,197
Oakville	825	3,369	Thornton	25	P.V.	Peterborough	11,305	24,977
GEORGIAN BAY SYSTEM			Tottenham	88	532	Pictou	1,148	3,400
(60-Cycle)			Uxbridge	387	1,480	Port Hope	2,489	4,997
Alliston	447	1,700	Victoria Harbour	102	979	Prescott	1,449	3,283
Arthur	147	1,089	Walkerton	967	2,534	Richmond	69	428
Bala	309	355	Waubashene	167	P.V.	Russell	64	P.V.
Barrie	4,024	9,559	Wiarton	255	1,750	Smith's Falls	2,809	7,741
Beaverton	329	941	Windermere	51	117	Stirling	320	947
Beeton	148	617	Wingham	663	2,149	Trenton	4,681	8,183
Bradford	193	1,041	Woodville	66	439	Tweed	271	1,181
Brechin	74	P.V.	EASTERN ONTARIO SYSTEM			Warkworth	65	P.V.
Cannington	241	761	(60-Cycle)			Wellington	286	948
Chatsworth	98	333	Alexandria	175	1,976	Westport	95	725
Chesley	588	1,812	Apple Hill	50	P.V.	Whitby	1,392	4,236
Coldwater	134	545	Arnprior	1,287	4,019	Williamsburg	86	P.V.
Collingwood	2,691	6,249	Athens	138	626	Winchester	391	1,017
Cookstown	94	P.V.	Bath	55	325	THUNDER BAY SYSTEM		
Creemore	158	661	Belleville	7,010	15,498	(60-Cycle)		
Dundalk	246	686	Bloomfield	156	636	Fort William	13,687	30,370
Durham	433	1,874	Bowmanville	2,564	3,850	Nipigon Twp.	216	V.A.
Elmvale	182	P.V.	Brighton	463	1,462	Port Arthur	18,332	24,217
Elmwood	66	P.V.	Brockville	4,656	10,576	NORTHERN ONTARIO		
Flesherton	54	452	Cardinal	384	1,602	PROPERTIES		
Grand Valley	145	645	Carleton Place	1,974	4,143	Nipissing District		
Gravenhurst	1,192	2,261	Chesterville	259	1,094	(60-Cycle)		
Hanover	1,493	3,190	Cobden	80	643	North Bay	4,227	16,013
Holstein	20	P.V.	Cobourg	2,265	5,907	Patricia District		
Huntsville	1,154	2,943	Colborne	211	960	(60-Cycle)		
Kincardine	800	2,483	Deseronto	220	1,002	Sioux Lookout	298	1,967
Kirkfield	26	P.V.	Finch	101	396	Sudbury District		
Lucknow	395	856	Frankford	160	1,095	(60-Cycle)		
Markdale	201	776	Hastings	121	823	Capreol	249	1,660
Meaford	713	2,759	Havelock	112	1,103	Sudbury	7,861	32,731
Midland	4,854	6,764	Iroquois	229	1,123			
Mildmay	150	764	Kemptville	362	1,230			
Mount Forest	557	1,936	Kingston	12,092	29,545			



## Ontario's Shipyards Build Many Types of Ships ... To Help Win the War!

● Down the ways in busy Ontario shipyards comes a long line of corvettes, cargo ships, mine-sweepers, patrol boats—and many other types—swiftly adding to the Royal Canadian Navy and our Merchant Marine. In Canada's victory program, sea strength is of paramount importance.

And from keel-laying to launching, Hydro-Electric energy is indispensable. Day and night, thousands of workers, in "the yards" use their full share of 500,000 electrical horsepower supplied by Hydro to Ontario's wartime industries. In other plants scattered all over the Province other thousands of workers on machines powered by Hydro are producing steel, engines and equipment to feed these shipyards.

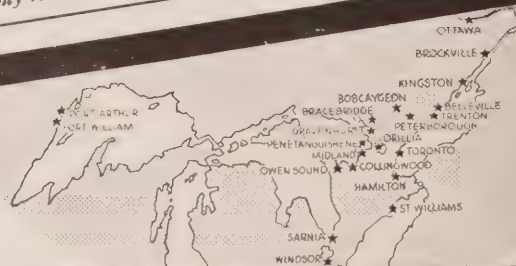
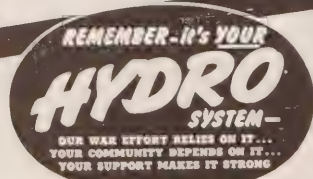
Today, every Ontario citizen desires to do his utmost and can therefore take pride in the fact that Hydro is providing well over 2,000,000 h.p. to assure the victory program and to maintain all essential services.

Because Hydro is vital to victory we must all be economical in its use in shop and home—not only to conserve electricity but, also, to save many metals and materials which are essential to the production of weapons of war. Let Victory come first!

### MAKE APPLIANCES LAST

Operate your electric range with the automatic switches according to directions. Cook several dishes at one time in the range oven, using only the bottom element. Never leave heating elements on 'high' a moment longer than necessary. Have your electrical dealer or local 'Hydro' keep your appliances in good repair.

Canada's pressing need of Today is the success of the  
**NEW VICTORY LOAN**  
Get ready to buy to the utmost of your ability.





HYDRO

News

HYDRO

"THE WRITING  
ON THE WALL"



# Your **HYDRO** Answers the Challenge!

## WARTIME POWER DEVELOPMENTS IN ONTARIO

● To meet the power needs of Ontario's war industries your Hydro has increased the supply of electricity in the last four years by over 760,000 h.p.

This has made a tremendous contribution to the war effort, providing our highly electrified factories in Ontario with the necessary power to produce great quantities of weapons for our fighting forces.

The development of new power sources is continuing—in the wilds of Northern Ontario a huge diversion program, that will reverse the natural flow of water, is nearing completion. In other parts of the Province additional power projects are nearing the final stages of construction.

The splendid co-operation of the citizens of Ontario in conserving electricity during the recent months has contributed greatly to our war effort and is thankfully acknowledged. The shortage of power, however, is still critical and the need for conservation continues.

Still more power is needed to produce still greater supplies of war weapons and materials. When the victory is won, that same power will be available to contribute to peacetime progress in our industrial, commercial and home life.

## INCREASE IN POWER FROM MOST RECENT DEVELOPMENTS

1. Plant nearing completion to provide 65,000 h.p.
2. Mid-Ontario plant supplying 10,000 h.p.
3. Hundreds of miles of new Transmission Line.
4. Rapid progress on new diversion program.
5. 54,000 h.p. plant into production last summer.
6. 230,000-volt Transformer Station to distribute power.





# HYDRO News

*formerly The BULLETIN*

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

PUBLISHED BY THE HYDRO-ELECTRIC  
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THOMAS H. HOGG, D.ENG., CHAIRMAN  
AND CHIEF ENGINEER.

HON. GEORGE H. CHALLIES, M.L.A.,  
COMMISSIONER.

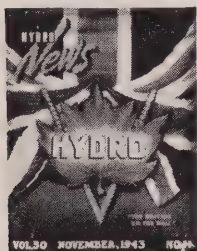
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## The Front Cover



**I**N these days of offensive action, the Maple Leaf, the famous "V" sign and the name "Hydro" assume a deep significance when they form an ensemble against a background of the Union Jack. Presented as the subject of this month's front cover, these symbols of patriotism, determination and power adorned the wall—the "west" wall incidentally—of the new DeCew Falls plant upon the occasion of the official opening.

Volume 30

November 1943

Number 11

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Eastern Ontario Convention	-	-	-	-	-	-	-	-	-	13
A.M.E.U. Meeting	-	-	-	-	-	-	-	-	-	16
Around The Hydro Circuit	-	-	-	-	-	-	-	-	-	18
Paris Convention	-	-	-	-	-	-	-	-	-	19
District No. 3, O.M.E.A. Convention	-	-	-	-	-	-	-	-	-	22
Hydro Home Forum	-	-	-	-	-	-	-	-	-	24
War Work Display	-	-	-	-	-	-	-	-	-	25
Monthly Load Summary	-	-	-	-	-	-	-	-	-	27
Municipal Loads	-	-	-	-	-	-	-	-	-	28



# Haven of HISTORY



SPEAKING AT the opening of the new DeCew Falls generating plant, Prime Minister George A. Drew announced that the nearby homestead, once occupied by John DeCou, pioneer of the district, would be preserved as a museum. When he visited the homestead later the same day, these pictures were taken. In the group with Col. Drew are Mrs. Drew, Dr. W. J. Macdonald, mayor of St. Catharines, and H. H. Smith, city clerk of St. Catharines.

DeCou who first acquired the place about 1790. DeCou, the premier recalled, had served as a captain in the militia in the war of 1812, and it was while he was a prisoner of war that Laura Secord had made her famous journey to warn Captain Fitzgibbon, then stationed at the DeCou homestead. "So," proceeded the speaker, "associated with this power development is one of the outstanding historic events in the preservation of Canada."

He then intimated that, "It is our intention to make that building an historic museum, appropriately equipped and accessible to the public, in which will be gathered the historic records of this area. And so, to any who may have been concerned about the damage (by fire) to the DeCou homestead, may I assure them that it will be preserved and maintained, and will be a centre of historic interest to those who cherish the traditions upon which the life of our people is based."

Commenting upon the announcement made by the Prime Minister, Dr. Thomas H. Hogg, chairman and chief engineer of The Hydro-Electric Power Commission of Ontario, said that the Commission would gladly co-operate in putting the building in shape for future use as a museum. "We will also see," said Dr. Hogg, "that there is adequate road provision to get to it because, I feel, in the future it will be a permanent record of the early history of this particular site."

Following the luncheon in the Commission's construction camp at the site of the new DeCew Falls' plant, Col. Drew and Mrs. Drew, accompanied by Hydro officials, visited the DeCou homestead which is now the property of the H.E.P.C.

The Prime Minister expressed keen interest in the old but solid structure and in other old buildings identified with the early history of the DeCew Falls' area which is frequently referred to as "The Cradle of the Canadian Hydro-Electric Industry."

**W**EATHER-BEATEN, fire-ravished, but still retaining much of its rugged glory of one and a half centuries ago, the spacious shrub-enshrouded homestead of John DeCou, located near the new DeCew Falls generating station, is to become a permanent museum in which all historic records of that area will be gathered and "made accessible to the public."

This interesting announcement came from Col. George A. Drew, Prime Minister of Ontario, when speaking at a luncheon after he had officially opened the Commission's 65,000 horsepower development at DeCew Falls.

He told the gathering in the Hydro construction camp dining hall, that he had noted the "symbolic arrangement" of the Union Jack, the "V" sign and the name "Hydro" above the generator. Perhaps, he remarked, there had been good reason for that arrangement because the name of the development itself had been taken from a name identified with the preservation of that flag and of this Empire.

Not far from the power plant, Col. Drew continued, stood the old building which had been occupied by John



## A NOTEWORTHY EVENT

**W**HEN Prime Minister George A. Drew snapped on a little black switch at DeCew Falls he officially chronicled another important chapter in the history of Hydro in Ontario.

This action, witnessed by cabinet ministers, H.E.P.C. officials and high-ranking naval, military and air force officers, set in motion the 65,000 horsepower generator which will provide additional and much-needed power for the Southern Ontario system.

The event was noteworthy for a number of reasons. The new plant itself, standing within a stone's throw of the old DeCew Falls development, reflects the progress made in engineering design and efficiency since the beginning of the present century. The old DeCew plant, built in 1898, has nine units which generate a total of 50,000 horsepower, while the new development, occupying about a third of the area of the old one, is capable of generating a third more energy with a single unit.

It was of more than passing interest that Col. Drew, in opening the new DeCew Falls development, should have taken the opportunity of announcing that "it is in the interests of the people of Ontario to develop the power resources to the very limit of our capacity."

Hydro, which has thrown the full weight of its resources behind the war effort, will stand ready to play its full part in the post-war era when men and women can again turn their hands and minds to the pursuits of peace and the building of a new and better world.

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## A WEAPON OF WAR

**W**ASTE in any form, whether it is in the use of essential materials or in the form of unnecessary demands made upon a vital service such as Hydro power, can prove highly detrimental to the efficiency and effectiveness of the war production programme. This is especially true at a time when the emphasis is on "Speeding The Victory."

The fact that conservation can be a very potent weapon of war was fully substantiated last year when this province—particularly Southern Ontario—was faced with an imminent power shortage because of the enormous demands made by war industries. At that time, it will be recalled that the Dominion Power Controller announced restrictions in the use of electric power for less essential purposes, while The Hydro-Electric Power

Commission of Ontario called upon local utilities and domestic consumers to voluntarily conserve power.

The response of the utilities and public alike to that appeal was highly gratifying and enabled the Commission to meet the demands of vital industries.

So far as the coming winter is concerned, Dr. Thomas H. Hogg, chairman and chief engineer of the H.E.P.C., has announced that the mandatory restrictions introduced by the Power Controller will remain in effect. Future economies, which may be necessary, he explained, will once again be of a voluntary character.

That means every effort should be made to avoid needless waste in the use of power such as leaving lights on in unused rooms or failing to turn off the range switch when the water commences to boil. Little savings here and there mean a great deal in the aggregate. Our slogan for the coming winter is: "Electricity is a War Weapon—Save It."

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## A KEYSTONE OF PROGRESS

**L**OYAL service is one of the keystones upon which a sound and progressive organization is built. Loyal service goes beyond the mechanical performance of a specific task for so many hours a day. It involves the faithful and intelligent application of one's skill and talents to the job which he or she is best qualified to undertake by reason of training or background.

The Hydro-Electric Power Commission of Ontario today stands not only as a monument to the unique and efficient application of the principles of public ownership, but it also reflects the loyal and untiring service of a large group of employees over a long period of years.

This fact was once again brought to mind by the annual dinner of the Quarter Century Club. At this happy event some three hundred members from various parts of the province foregathered to renew old acquaintances and exchange reminiscences of the early days of Hydro. Many in attendance had more than thirty years' service to their credit, and this year over a hundred members became eligible for buttons and certificates.

G. T. Brown of Burlington, the retiring president, announced that there are now over five hundred names on the membership roll.

These facts bear testimony to the noteworthy continuity of service which is associated with the growth of Hydro in this province.

# "FORT OF FREEDOM"

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## GOES INTO ACTION



PRIME MINISTER GEORGE A. DREW of Ontario (left) snaps on the switch which sets in motion the 65,000 horse-power generator (above) in the new DeCew Falls plant. A side view of the new plant, showing the tailrace, is reproduced in the lower illustration.

LIKE a slumbering giant suddenly awakened, the massive 250-ton generator at the new six-million-dollar DeCew Falls plant whirled into action at the touch of a little black switch on Friday, October 15, when Prime Minister George A. Drew officially opened "this new fort of freedom."

At this historic event, Col. Drew took the opportunity of paying tribute to the "skill, organization and tradition" of The Hydro-Electric Power Commission of Ontario, and spoke of the "remarkable speed" with which the new plant had been built. At the same time, he announced

that in so far as broad policies of his government were concerned, basic underlying decisions made would be that "it is in the interests of the people of Ontario to develop the power resources to the very limit of our capacity."

As the deep reverberating voice of the sleek, grey-coated unit in the DeCew development was added to the ceaseless, humming chorus of victory from other Hydro plants in various parts of the province, another 65,000 horsepower flowed into the Southern Ontario system to give further impetus to vital war production.

The same switch which set this new development in





UPON ARRIVAL at the new DeCew Falls plant, Col. George A. Drew inspected the guard of honour (left) while in the picture below he is shown addressing the gathering in attendance at the opening ceremonies. He described the new plant as "A Fort of Freedom."



"THIS is the third plant constructed by the Commission in southern Ontario since the beginning of the war . . . Hydro pledged its entire resources to the war effort," said Dr. Thomas H. Hogg, chairman and chief engineer of the H.E.P.C. (centre left). Behind him stand Hon. Charles Daley, Minister of Labour; and Prime Minister Drew.

"SYMBOLIC ARRANGEMENT" were the words used by the Prime Minister to describe the illuminated "V" and the name "Hydro" against a large Union Jack and Maple Leaf which provided an impressive background for the generator. Eyes of the official party were viewing these decorations when the above picture was taken. All the members of the official party are shown in the illustration on the left.

motion proclaimed the symbolic significance of the added power from this plant at a time when the forces of the United Nations are on the march. Above the unit, a series of lights flashed on to outline the famous "V" sign and the boldly-illuminated word "Hydro" which were superimposed upon a giant Maple Leaf. Forming an impressive and patriotic background for this arresting and colourful display was a huge Union Jack whose sweeping folds draped

both sides of the victory motif.

The war-time atmosphere was accentuated by the presence of high-ranking naval, military and air force officers and the soldiers who formed the smart guard of honour.

As the members of the official party arrived movie machines clicked and camera bulbs flashed. Spectators, comprising Hydro officials, members of the press, construction and operating men gathered round, while Col. Drew





DR. THOMAS H. HOGG was indicating to Prime Minister George A. Drew the direction in which the switch should be turned when the cameraman caught the candid shot shown in the upper left circle.

BOTH the Prime Minister and Mrs. Drew were keenly interested in the operation of the turbine and generator at the new plant. They are shown with Dr. Hogg in the upper right illustration.



SOMETHING of interest had caught the eye of Air Vice-Marshal Frank McGill (centre left) who points it out to M. J. McHenry, chief priorities officer, H.E.P.C., and Commander P. W. Earl.

PRIME MINISTER DREW spent some time talking to the men who helped build the new DeCew Falls plant. He is shown (bottom left) chatting to Angus Richardson, H.E.P.C. engineer.



inspected the two ranks of soldiers lined up outside the plant.

In the official party were Premier George A. Drew and Mrs. Drew; Dr. Thomas H. Hogg, chairman and chief engineer, H.E.P.C.; Hon. George H. Challies, commissioner, H.E.P.C.; Hon. Charles Daley, minister of labour; Osborne Mitchell, secretary, H.E.P.C.; Commander P. W. Earl, commanding officer, Reserve Division, R.C.N.V.R.; Brigadier O. M. Martin, acting officer commanding, Military District No. 2; Air Vice-Marshal Frank McGill, air officer commanding, No. 1, Air Training Command, R.C.A.F.

Assembled on the pleasingly decorated platform erected at the side of the generator inside the DeCew plant, the members of the party and the spectators were told by Dr. Hogg that the new 65,000 horsepower development had been constructed at a cost of six million dollars and that it had been essentially a war measure.

"When adverse developments in the early stages of the war made it evident that hostilities might continue for some considerable time," he declared, "The Hydro-Electric Power Commission of Ontario—which had pledged its entire re-



sources to the war effort—made plans to provide additional generating capacity to meet the prodigious load demands of war industry. The DeCew Falls site offered an opportunity for the generation of power at a comparatively early date, and ground was first broken on this site in October, 1941, exactly two years ago."

The new plant, Dr. Hogg continued, was the third constructed by the Commission in Southern Ontario since the beginning of the war. A very unique feature of the DeCew development was its water supply. "Concurrently with the building of this generating station," he said, "the Commission was building works necessary for the diversion of Ogoki river waters. That gigantic diversion project, which was begun in November, 1940, went into operation just recently. It seems to me, therefore, that there is a touch of the dramatic in the fact that a portion of the water made available by the Ogoki river and Long Lake diversions is being brought a thousand miles to set in motion today this turbo-generator at DeCew Falls."

Another feature of the plant, the Hydro chairman said, was that the generator itself had been formerly installed in the Abitibi Canyon development in Northern Ontario. By transferring the unit from Abitibi to DeCew Falls, much valuable time had been gained in rushing the job to completion.

It was also interesting to note the advancement in engineering design, as represented by the old and new DeCew Falls plants, continued Dr. Hogg. The old 66-2/3 cycle station extended over an area 50 feet by 490 feet and housed 9 units, with a total capacity of 50,000 horsepower. The new plant, occupying an area only one-third as great, will generate—with its single unit—more energy than do the entire 9 units of the old development.

### Lunch In Construction Camp

Following the opening ceremonies at the plant, members of the official party, Hydro officials and visitors sat down on wooden benches to enjoy a typical construction camp lunch.

Addressing the gathering in the camp dining hut, Prime Minister Drew said that he had been greatly impressed by the decorations behind the unit in the power house. He had noted the "V" which had been illuminated with the movement of the turbine, while he had also noted the huge Union Jack. "Gentlemen," declared Col. Drew, "that was symbolic. It would take 1,300,000 men working 24 hours a day to equal the job that can be done by that single electrical unit which is now working for victory and all that is represented by that glorious flag."

It made one proud to be a Canadian to see that mighty energy come into operation, continued the Prime Minister. "In all its stern simplicity, it so resembles a fort. It appropriately looks like a fort—one of the forts of freedom," he said.

The people of Ontario, declared Col. Drew at another point, had reason to be proud of the great traditions associated with Hydro which went back to the dreams of the late Sir Adam Beck that an enterprise of that kind, operated on a non-political basis, could develop the skill, loyalty, service and efficiency of operation, equal to the best in the field of private enterprise.

The Prime Minister said that he thought it would be a mistake for anyone to base an argument on the comparative merits of private enterprise and public ownership if one were to take Hydro as an example because, behind excellence of the work done by that organization had been the spirit of those associated with it and the high tradition of loyalty that they themselves were taking part in a worthwhile enterprise.

Continuing, the speaker contended that arguments about surpluses of power were largely theoretical because the truth of the matter was that in a world where movement of people was so much easier now than it had ever been before, people would always move to areas where power was available.

"Where you have, as we have," proceeded Col. Drew, "a remarkable wealth of raw material and power, and where you have the assurance, contained in the Atlantic Charter, of a freer movement of the products of man's hands after the war, we Canadians need have no fear of developing too much power because the extent of the power available will be the extent of our ability to give employment to the people of this province.

"In so far as broad policies are concerned," said the Prime Minister, "in whatever time it is my duty to act in co-operation with this great Commission, the basic underlying decisions made will be that it is in the interests of the people of Ontario to develop the power resources to the very limit of our capacity.

### Need All Efficient Power

"I am convinced," he declared, "that the tremendous forces let loose in this war and by the war—forces which we, ourselves, scarcely realize we possess—I am convinced that these forces, developed by the demands of war, are going to keep on expanding after the war is over. Because of the needs of peace we can fill and because of our vast resources of raw material, I think we in Ontario will need all the efficient power we can get."

The Prime Minister also expressed the opinion that various types of research institutions should seek to develop ways and means of increasing the efficiency of production, distribution and the use of power. It was a matter of pride, he said, that in The Hydro-Electric Power Commission of Ontario they had such skill that there was every promise in the future that they would be able to meet new demands. "We have in the present chairman himself," declared Premier Drew, "an engineer of outstanding ability. We have also in that Commission many engineers whose skill has been recognized and who are on loan for special work in the war. These men will bring back new knowledge which will add to the efficiency of the organization."

The speaker said that he was satisfied that when the history of the present war was written a very important place would be devoted to the contribution of Hydro and those who served the Commission.

In conclusion, the Premier remarked, "What we have seen today, and what may well come from the flow of power, is another nail in Hitler's coffin, the destruction of evil forces and the dawn of a better day." (Applause).

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MEMBERS OF the official party in company with Hydro officials and representatives of the press sat down to a typical construction camp lunch in a construction camp dining-room after the opening ceremonies. Upper left illustration shows, Otto Holden in the foreground, while "Fourth Estate" representatives are shown (top right). The next picture features Edward Donahue, the chef at DeCew Falls, whose efforts won unanimous acclaim and an introduction to the Prime Minister. The group (third from the top) includes T. U. Fairlie, property department, H.E.P.C.; F. H. Chandler, electrical engineering department, H.E.P.C.; and A. W. Manby, executive department, H.E.P.C. And electrical engineering department, H.E.P.C. And here's a section of the head table (bottom right), showing Mrs. George A. Drew; Brigadier O. M. Martin, acting officer commanding, Military District No. 2; Kenneth A. Christie, K.C., president, O.M.E.A. (pouring coffee); and Osborne Mitchell, secretary, H.E.P.C. Among those seen in the bottom left illustration are: John Dibblee, assistant chief engineer, H.E.P.C.; Dr. W. J. Chapman, commissioner, St. Catharines Public Utilities Commission; and Garnet Edwards, chairman, Hydro Division, Windsor Utilities Commission.



# DINNER DATE Kept by Club Members

CONGRATULATIONS are extended to B. O. Salter, Toronto, the new president of the Quarter Century Club, by G. T. Brown of Burlington, the retiring president.

A GENERAL view of the gathering is shown at the right.



REMINISCENCES of earlier days, when they stood shoulder to shoulder, each playing his or her part in laying the solid foundation of the great Hydro enterprise of today, were recalled on October 22 when the boys and girls of the Quarter Century Club kept their annual dinner date at the King Edward Hotel.

In high spirits and to the rousing skirl of bagpipes, approximately 300 club members trooped into the Crystal Ballroom which soon re-echoed the sound of laughter, good-natured banter and the clinking of cutlery and dishes. Between courses, the gathering joined in choruses of songs that are old but ever popular, while a pianist provided the accompaniment.

Many members of the club were, of course, unable to attend because they had to be at their posts of duty helping maintain uninterrupted Hydro service to war plants and

communities throughout Ontario. For those who were able to come it was an evening of good fellowship in which ponderous speeches had no place. There was, however, one solemn note during the proceedings when, with bowed heads, the gathering paid reverent tribute to the nine members who had passed away since the last dinner.

G. T. Brown of Burlington, the president, announced that there were 513 members on the membership role. At the same time, he read messages of greeting from Dr. Thomas H. Hogg, chairman and chief engineer, and Hon. George H. Challies, commissioner, H.E.P.C., who were unable to be present.

Over 100 names appear on the list of Hydro employees who became eligible for the 25-year certificate and button during the present year. In this connection, an interesting  
(Continued on page 11)



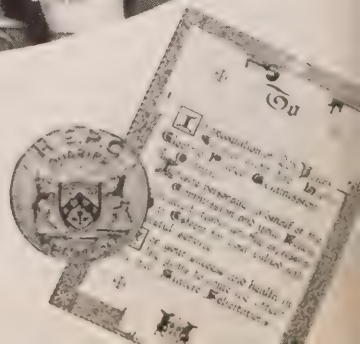
AN investigation into reasons why "such young ladies can qualify for membership in this club" was being sought by Otto Holden when the cameraman took this shot. Some of the ladies are shown in the group at the right.







PICTORIAL impressions of the Quarter Century Club dinner are reproduced on this page. Many members may "discover" themselves in the groups. The programme of entertainment included a lively interpretation of a Hawaiian dance (centre).







"LIKE FATHER like son," might be an appropriate title for the picture on the left. Here, Cyrus S. Flommerfelt, Sr., shows his son, C. S. Flommerfelt, Jr., his Quarter Century Club certificate. Next year, "Junior" will qualify for his award. Both are electricians at Niagara Falls.

WILLIAM A. ARMSTRONG (centre with hands folded) receives congratulations from W. J. Robinson upon receiving his certificate. Others included in the group are W. L. Amos, W. H. Pomeroy, D. Townsend, W. Wills and David Fleming.



S. R. A. CLEMENT (below) showed a fine turn of speed when his name was drawn as the winner of a prize. A bulky parcel in one hand and his pipe in the other, he dashed back to his place—and into camera range.



BELOW is a general view of one section of the gathering at the Quarter Century Club dinner.



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feature of the programme was the introduction of Cyrus S. Flommerfelt, Sr., and C. S. Flommerfelt, Jr., who were both in attendance at the banquet. The former is an electrician at the Queenston plant, while the latter is an electrician at the Ontario Power Company plant. Mr. Flommerfelt, Sr., received his button and certificate at this year's dinner, while the son will qualify for membership in the club next year.

Officers elected for the ensuing year are: B. O. Salter, Toronto, president; William McKenzie, Toronto, vice-president; Thomas McFadyen, Toronto, treasurer. S. L. Eisenhofer, who has been secretary of the club since its inception, was again elected to that position.

The following are the names of members who received certificates and buttons this year:

#### LADIES

NAME	DEPARTMENT	LOCATION
Currell, Marie Margaret	Steno. Bureau	Toronto.
Grear, Lilian Irene (Mrs.)	Purchasing	Toronto.
Hickling, Phyllis	Inspection	Brockville.
Little, Ada E.	Tabulating	Toronto.
Logan, Olive Louisa	Operating	Niagara Falls.
MacPherson, Tessa	Treasury	Toronto.
Stark, Edna Roberts	Accts. Rec.	Toronto.
Walker, Fern Dorothy	Inspection	Toronto.
Woodley, Keitha	Operating	Belleville.

#### MEN

NAME	DEPARTMENT	LOCATION
Allen, Geo. Clifford	Municipal	Sarnia.
Armstrong, Carl Henry	Acctg. E.O.S.	Toronto.
Armstrong, William Allan	Emp. Relations	Toronto.
Bain, James	Accts. Payable	Toronto.
Beck, Horace Wilfrid	Purchasing	Toronto.
Bleeker, Harry Elijah	Operating	Campbellford .
Bradshaw, George Henry	Elec. Eng.	Toronto.
Brown, Edward Patrick	Accts. Payable	Toronto.
Brown, Perry Albert	Operating	Frankford.
Brunelle, Elie	Construction	Toronto.
Buemi, John	Operating	Niagara Falls.
Burley, Arthur	Operating	Niagara Falls.
(Pensioned Aug. 1/43)		
Cameron, Ewen MacIntosh	Operating	Stratford.
Carphin, Donald McKechnie	Accounting	Toronto.
Carradus, Frederick George	Accounting	Toronto.
Chalmers, Percy	Operating	Niagara Falls.
Chandler, Frederick Hubert	Elec. Eng.	Toronto.
Chisholm, Thomas Horace	Laboratory	Toronto.
Clark, Andrew Tudhope	Construction	Toronto (Bloor)
Cronkhite, Douglas Stephen	Elec. Inspect.	Toronto.
Crosse, Claude St. Cyr	Operating	Niagara Falls.
Cullum, John Ernest	Operating	Niagara Falls.

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# POUNDS / *make* DOLLARS



**P**OUNDS made dollars for the Evening Telegram British War Victims Fund recently when the staff at the Bloor Street Stores depot gathered for an evening of entertainment.

A rather unique idea was carried out in that the ladies were given numbers and these were tossed into a hat. The men in turn drew them and then teamed up with the lady of the corresponding number. The lady, and the lunch that she had brought to the party, were then weighed and the total was paid, a cent a pound, by her partner.

There was good fun for everybody with bingo, dancing and lunches prepared by the girls. The crowd was in high spirits as they posed for the photographer in the upper picture.

A. T. Clark is shown digging down deep for his lunch as Dave Forgan and Bob Lightbody adjust the scales weighing Marie O'Rourke. The rest of the crowd gathered around to offer advice and make "wise cracks." On the right some can be seen playing bingo, while below the girls bring in the lunches on a truck.

When the fun was over, twenty-five dollars had been realized, and it was turned over to the fund. The committee in charge of the affair were A. T. Clark, Robert Lightbody, Marie O'Rourke, June MacDonald and Don Preston.



# MUST MAINTAIN RESTRICTIONS TO MEET WINTER PEAK LOADS

**Dr. Thomas H. Hogg Tells Eastern Ontario O.M.E.A. Delegates Greater Voluntary Saving In Use Of Electricity May Be Sought — Conveys Greetings From Commissioner George H. Challies**

**R**ESTRICTIONS in the use of electricity during the coming winter must be maintained, and any future economies, which may be necessary, will be of a voluntary character, Dr. Thomas H. Hogg, chairman and chief engineer, H.E.P.C., told the annual convention of the Eastern Ontario Municipal Electric Association at Kingston on September 24.

Dr. Hogg pointed out that while most of the increase in power load during recent years has been attributed to the war, it was significant that since 1935 both the load in horsepower and the energy used had more than doubled. Referring particularly to Eastern Ontario, he informed the delegates that during the past year important war load increases in the eastern part of the Province had utilized earlier than anticipated, the additional capacity secured in the Barrett Chute development.

"The increase over last year, on the Eastern Ontario System, is nearly 14,000 horsepower and it now appears that the coming winter peak may exceed the total installed capacity of the system by about 7,000 to 8,000 horsepower", Dr. Hogg stated. This condition could be met, he said, in one of three ways: by cutting off, for short periods, certain interruptible power being supplied to war industries; by transferring power, if available, from the Niagara system; or by calling on the citizens generally to be more sparing in their uses of electric power.

## Planning for Future

Over 200 delegates were in attendance at the La Salle Hotel to hear the chairman's address, which dealt with many matters of general and local interest. W. Ross Strike, president of the district association, in his introductory remarks, reviewed power problems in Eastern Ontario, stating that because of large areas which were not suitable for cultivation and because of the great distance between main centres, transmission and power cost problems were entirely different from those of western Ontario. He outlined the difficulties encountered in planning present and future power developments, revolving around the question of whether a large or a small development would be more advantageous.

The large-development group, Mr. Strike explained, maintained that it was a waste of money to undertake small developments such as 50,000 horsepower and felt that eastern Ontario should undertake a development of the order of 250,000 to 400,000 horsepower, on the assumption that if power were available, "customers will come running to use it." This group also claimed that the capital cost per horsepower of the small plant was a dear price to pay for an inadequate source of power that depended on the normal flow of small rivers.

The small-development group, the speaker stated, contended that it was safer and wiser to build on the existing system, as the nature of the terrain in large sections of eastern Ontario and the history of population growth made it advisable to keep away from large developments which would have the effect of burdening the system with heavy capital and overhead charges. This viewpoint also took into account the likelihood of the eventual development of the St. Lawrence River, which was considered a greater attraction to large power consumers than a development elsewhere in the eastern part of the province, the speaker said.

Mr. Strike introduced G. F. Drewry, district engineer of the H.E.P.C. municipal engineering department, who discussed eastern Ontario's distribution system. In normal years, Mr. Drewry stated, the primary peak of the Eastern Ontario System increased by 5 to 7 per cent annually, but in the period 1940-41, it increased by 17½ per cent, largely as a result of industrial and military demands in the area.

Rural electrical service came in for attention in Mr. Drewry's address. There were 27,860 rural power consumers in Eastern Ontario, he stated, and within recent months 322 new rural services had been installed throughout the Province. The speaker predicted rural electrification on a greatly increased scale following the war.

At the conclusion of his remarks Mr. Drewry presented a motion picture of the severe snowstorm which swept the St. Lawrence valley district last December.

## Business Session

Among the principal items arising from the business session were a resolution regarding the Unemployment Insurance Act, to the effect that employees of public utilities and municipal employees should either all be included in, or all excluded from, the provisions of the Act; and a resolution favouring a uniform electric power rate for every municipality, with all municipalities paying the same price per horsepower at the substation.

The meeting also expressed itself as being "strongly of the opinion that the chairman of the Ontario Hydro Commission should be retained in his present position."

The election of executive officers for the ensuing year resulted in the following:

President: W. Ross Strike, Bowmanville; vice-presidents: western section, George Boddy, Oshawa; eastern section, George Findlay, Carleton Place; secretary-treasurer, G. E. Chase, Bowmanville; directors: G. S. Matthews, Peterborough; W. B. Reynolds, M.L.A., Brockville; Frank Plant, Ottawa.

Thomas A. Andre, chairman of the Kingston Public





A FEATURE of the convention was a side trip to the Nylon plant where this "shot" was taken.



SMILES WERE NOT RATIONED as the photographer caught this happy group.



GEORGE BODDY, Oshawa, chats with J. E. Rinch, center, and C. R. Carveth, left, both of Newcastle.



JUST BEFORE Dr. Hogg's address, the cameraman "shot" this section of the gathering.

Utilities Commission, presided at luncheon and introduced Mayor H. A. Stewart, M.L.A., who extended a hearty welcome to the delegates.

Present at the head table was C. J. Warrington, development manager of the Canadian Industries Limited Nylon plant at Kingston, who gave an interesting address on the history of Nylon and told of the versatility of the product in time of war. His address formed a background for a visit to the plant later in the day, when O.M.E.A. delegates were shown through the plant and witnessed the processing operations. Mr. Warrington was introduced to the meeting by C. C. Folger, manager of the Kingston commission.

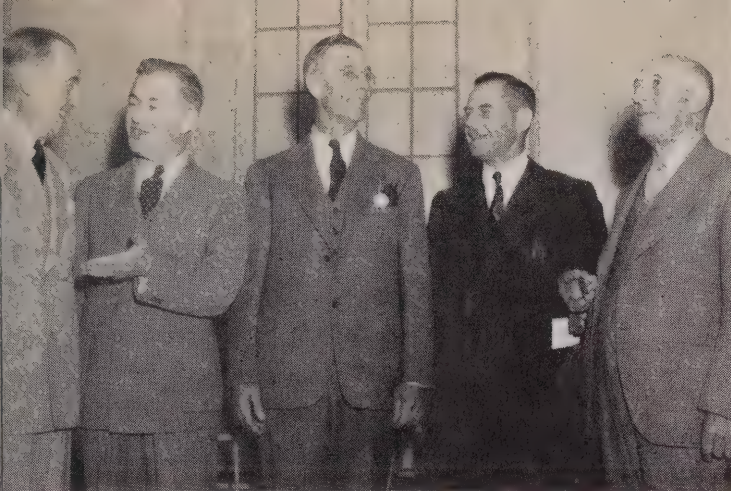
K. A. Christie, K.C., O.M.E.A. president, stated in a brief address that the executive of the association has never received fuller co-operation from The Hydro-Electric Power Commission than during the chairmanship of Dr. Hogg. He also complimented Mr. Strike and members of District No. 1 on their keen interest and efforts on behalf of Hydro in eastern Ontario.

Dr. Hogg prefaced his remarks with a message of greeting to the convention from Hon. George H. Challies, newly appointed Hydro commissioner, who was unable to be present. Referring to the commissioner's keen interest in Ontario's power problems, the chairman added: "I can



SEATED ON Dr. Thomas H. Hogg's right is Dr. R. C. Wallace, principal of Queen's University, and on his left are C. J. Warrington, Thomas A. Andre, and mayor H. A. Stewart, M.L.A.





OFFICIALS OF the Kingston Public Utilities Commission, shown here are: C. Folger, manager; Howard Kelly, commissioner; Thomas A. Andre, chairman; mayor H. A. Stewart, M.L.A., commissioner; and James Halliday, commissioner.



THIS ILLUSTRATION shows a cross-section of the delegates in attendance at the afternoon business session.



THIS FOURSOME represented the Lindsay commission. They are: Walter Reesor, superintendent; mayor Charles Lamb; and J. George Baldwin and R. J. Morris, commissioners.

assure you that it will be very helpful to the Commission to have Mr. Challies' advice. Not only has he been a student of Hydro for a great many years, but his intimate knowledge of Eastern Ontario's problems will be a great asset."

#### Many Indirect Benefits

"Since a year ago much water has passed through the turbines of our power plants," the Hydro chairman continued. "The new development at Barrett Chute has been in operation for more than a year and has proved a splendid development in all respects. With its capacity of 54,000 horsepower, it contributed—over the year—about 25 per cent of the total peak load capacity utilized by the Eastern Ontario System, now about 200,000 horsepower. It is a plant admirably suited to the power requirements of Eastern Ontario", he went on, "and furthermore, many indirect benefits result from the policy of developing the sites and



W. ROSS STRIKE, Bowmanville, addressed the noon luncheon. On his right are mayor H. A. Stewart, Kingston; and K. A. Christie, K.C., O.M.E.A. president; while on his immediate left is R. T. Jeffery, chief municipal engineer H.E.P.C.

storage reservoirs upon the rivers flowing through the area served." Dr. Hogg revealed that the Barrett Chute development had been constructed at a cost lower than that called for in the original engineering estimates.

In recalling the severe snowstorm which occurred in eastern Ontario at the end of last year, he remarked, "partly because spectacular war news dominated our thoughts at that time public attention was not focused for long upon the most devastating snow and sleet storm in 50 years, which swept through more than 3,000 square miles in the St. Lawrence valley country. Following early December blizzards and heavy snow, there came on December 29 last a snow and sleet storm which placed a heavy sheet of ice all along the St. Lawrence valley for 15 miles north of the river and south far into New York State.

"I should like to pay tribute to the splendid co-operation of the various municipalities in the area."

(Continued on page 27)



# NEW SYSTEM OF METER READING OUTLINED AT A.M.E.U. MEETING

Predict Saving Of \$10,000 Annually—Involves Use Of Reply Type Double Post-Card

**A** NEW system of post-card meter reading which, it is claimed, will effect a saving of over \$10,000 annually in labour, stationery and postage, was announced at an A.M.E.U. meeting at London recently.

Conducted under the auspices of the Western Ontario Division, Accounting and Office Administration Committee, the gathering discussed many questions of vital interest to Hydro utilities across Ontario.

Details of the new meter reading system applicable to rural billing operation were outlined by F. A. Archer, of the H.E.P.C., who designed the new system.

He explained that under the new system a reply type double post-card replaces the present system of using three-cent post-cards and one-cent stamped window envelopes. One part is addressed to the consumer with instructions on the reverse side and the other, a reply card, addressed to the superintendent, carries reproductions of large dials on the reverse side in order that the consumer may record the readings on his meter. Each section will carry a one-cent postage stamp.

These cards are being shipped to rural offices unfolded to permit easy addressing of both parts but they have to be folded on perforated line before mailing to consumer.

An almost similar card is now being used by the East York Hydro Commission and may also be used in municipal systems where readings are obtained by meter readers. The card is left when the consumer is away, and there is a one-cent prepaid stamp on the return portion only. The advantage in the use of these cards, it was stated, was the elimination of envelopes combined with a saving in postage.

The new rural bill was also presented. This is of standard size for use in typewriter or billing machines. The return address is printed on the bill in a set position in order to show through a special outlook in the envelope. Partial perforation is made on the bill for easy and exact folding to enclose in the envelope. The envelopes will have two outlooks. The larger one, to show the consumer's address and the smaller one at the top left-hand corner, the return address.



HEAD TABLE GUESTS shown here, from left to right, are: C. W. Eastwood, London; J. F. Cooke, of Windsor, (hidden from view); A. F. Parker, Woodstock; V. A. McKillop, London; A. B. Manson, Stratford; J. G. Murray, guest speaker; W. E. Wallace, Windsor; P. B. Yates, St. Catharines; Miss Kathleen Ciceri, secretary, O.M.E.A.; S. R. A. Clement, H.E.P.C.; P. R. Locke, St. Thomas; and Stewart Watt, Guelph.





THE CAMERAMAN CAUGHT these delegates (left) as they listened J. G. Murray explain the pension plan. Lady members were also interested in the business session. On the right, from left to right, are: Miss Mac Phillips, Palmerston; Mrs. M. Williams, Petrolia; Miss H.



Crawford, Kingsville; Miss R. Grooms, Amherstburg; Miss F. Johnson, Leamington; Mrs. D. Tiffin, Dresden. The two men are J. Hammond, Hamilton, and C. A. Veigel, Paris.



HELEN CICERI and P. B. Yates, St. Catharines; R. S. Olds, Chatham, and D. J. McAuley, H.E.P.C., discuss a knotty point, at the close of the luncheon.



THE LOWER RIGHT is a general view of the convention held in the Hotel London.

All envelopes will have postage stamps affixed and will be supplied only in boxes of a thousand. This new bill and envelope is labour saving since the bill is easy to fold and the envelope is already stamped for mailing. This new system he said had been approved by the H.E.P.C. and postal authorities, and can be adapted to municipal work.

Stewart Watt, of Guelph, gave a paper on meter reading by the consumer in which he outlined the method now being used by the Guelph Commission.

"The method was inaugurated about 20 years ago by the late John J. Heeg," he recalled, "and has been continued ever since with some modification.

C. W. Eastwood, of the London Public Utilities, introduced the question of the collection of accounts from consumers who had moved from one municipality to another. He said there had been splendid co-operation between municipalities. "Many accounts," he continued, "have been collected for the London Utilities by other municipalities and we have similarly collected accounts for other utilities." Mr. Eastwood pointed out that the H.E.P.C. were now compiling lists of such delinquent consumers which would be circulated among municipalities in order that outstanding accounts might be collected.

It was also suggested from the floor of the meeting that a set charge be made for the collection of these accounts and

that the number of months service for which another municipality could be asked to collect should be limited to three.

Guest speaker at the noon luncheon was J. G. Murray, Life Insurance Company executive, who outlined the pension scheme in which Hydro employees participate. In the course of his address he pointed out the functions of the various parts in the plan, and the operation of the joint deposit account.

Some interesting historical facts on the background of the present municipal accounting system were given in an address by S. R. A. Clement, secretary of the A.M.E.U.

In 1909, Mr. Clement stated, The Hydro-Electric Power Commission of Ontario called the first meeting of engineers and superintendents of the original fourteen Hydro municipalities. Held in Toronto on September 29 and 30, it was opened by the Hon. Adam Beck, then chairman of the Commission, and presided over by R. A. Ross, of Ross and Holgate, consulting engineers for the Commission, while P. B. Yates acted as secretary. At that meeting, continued Mr. Clement, it was decided that "some standard system of accounting be considered advisable, the Commission was requested to report on the system best adapted for use."

At the second meeting, the speaker went on, it was resolved that "the towns authorize their auditors to meet and draw up a system of accounting to be submitted to a

(Continued on page 26)



# Around the Hydro Circuit

## DUNDAS PAYS OFF

An important event was chronicled in the annals of Hydro in Dundas recently, when the Public Utilities Commission of that enterprising centre made the final payment of \$2,211.40 on Hydro debentures issued in 1913. The occasion was marked by a dinner in the Collins Hotel at Dundas and was attended by members of the local commission, town council, representatives of the county council and various civic bodies, as well as other notable citizens.

During the course of the evening many fine tributes were paid to commission members, both past and present, who, even in the face of adverse criticism, particularly at the time of Hydro's introduction in Dundas in 1913, had the courage and foresight to "carry on" until now the Hydro section of the utilities is in the enviable economic position of being free from debt.

Edward Coons, chairman of the Dundas commission, introduced the various speakers who were: Mayor Robert H. Hunter; H. C. Davis, former mayor and member of the public utilities commission; Fred Warren, M.L.A.; Warden D. P. Cliff, reeve of Dundas; Sheriff Dr. A. C. Caldwell; Mrs. J. A. MacLenan, first lady chairman of the Board of Education; John Mahony, Separate School Board; T. A. Scott, superintendent, Dundas Rural Power District; Herbert Smith, Library Board; Gordon Dobson, chairman, Parks Board, and Harry W. Lawson, commissioner.

## PARIS SUPERINTENDENT

GEORGE EDWARD BOUCHER, superintendent, Hydro and water of the Paris Public Utilities Commission, is well acquainted with Hydro, having been on the staff of The Hydro-Electric Power Commission of Ontario for 14 years, and with the Paris Utilities for the past 8 years.

A native of Guernsey, B.C.I., which, it will be remembered, is now in the hands of the Nazis, Mr. Boucher came to this country at an early age and was educated in Hamilton, Ontario. His hobbies are fishing and hunting.

## SERVES ON PARIS COMMISSION

GEORGE L. FOULDS, commissioner, Paris Public Utilities Commission, is proud of the fact that his Scottish forebears were pioneer settlers in the Paris district. He himself was born in Paris, Ontario, in 1906 and attended public, high school and business college there.

Mr. Foulds is now an automobile dealer, and is a comparatively newcomer to the P.U.C., having served on the commission for the past two years.

## PARIS COMMISSIONER

CHARLES CHESTER WHEELER, commissioner for the past two years of the Paris Commission, was born in Brooklyn, N.Y., in 1888. Receiving part of his education in the United States and finishing it in Canada, he is now a manufacturer and needle engineer. Mr. Wheeler has always taken a keen interest in all sports, particularly hunting and fishing.

## REPORTED MISSING

SERGEANT NELSON A. NOBLE, R.C.A.F., who was on the staff of the H.E.P.C. electrical engineering department, transmission section, from August, 1939, to August, 1941, has been reported missing.

## PARIS SECRETARY-TREASURER

CLARENCE A. VEIGEL, who has been secretary-treasurer of the Paris Public Utilities Commission for the past 14 years, was born in Hagersville, Ontario, in 1893. He received his public and high school education in Hagersville and found time to take an active part in his favourite sports of baseball and hockey. Later he attended the Normal school in Hamilton, and for a number of years, was a public school teacher.

Mr. Veigel's leisure hours in the summer time are taken up with lawn bowling, being past president of the Paris Club.

## MAYOR OF PARIS

Mayor JOHN P. McCAMMON of Paris, Ontario, who is also a member of the town's Public Utilities Commission, was born in Oxford County in 1878.

Following his first and secondary schooling in Paris, he became a mortician.

Being keenly interested in municipal affairs, Mr. McCammon has been councillor, deputy reeve, reeve, and for the past four years, mayor of Paris. He was also warden of Brant County in 1926.

While at school he was devoted to sports—lacrosse, hockey and softball in particular. Mayor McCammon's principal hobby is music. He has the distinction of having been a tenor in a church choir for the past 45 years.

## PARIS CHAIRMAN

RICHARD THOMSON, chairman, Paris Public Utilities Commission, has completed 18 years' service on the commission. Born in New York city in 1864, he received his early education there, later completing it in Paris, Ontario.

Mr. Thomson is in the manufacturing business, and during victory loan campaigns acts as captain of the Paris Victory Loan salesmen. His hobbies are bridge, curling, golf and lawn bowling.

## FINE RECORD OF SERVICE

FRED BARRON, D.D.S., commissioner, Paris Public Utilities Commission, has had 11 years' experience with Hydro affairs, having been mayor for two years, chairman for six years, while he was a commissioner for three years. He also served on the School Board from 1923 to 1928.

Born in Seymour township, he received his early education in Campbellford, Ontario, and later graduated from the Ontario Dental College.

Dr. Barron is keenly interested in municipal work, but finds time to do considerable reading, especially on the subject of economics.



# DEBATE PENSION PROBLEMS AT DISTRICT 5 CONVENTION

**Carl D. Hanniwell Of Niagara Falls Stresses Difficulties Created By War-Time Conditions—Would Change Existing Agreement—Oppose Amendment To Unemployment Insurance Act—  
Roy Pierson Of Brantford Township Elected President**

**A** SPIRITED and lengthy debate on the existing pension plan agreement and difficulties which have confronted certain municipalities as a result of the war, featured the business session of District No. 5, O.M.E.A., convention at Paris on October 13 under the chairmanship of Keith MacLeod of Stamford Township, president of the district.

The representative of gathering of delegates in attendance climaxed the discussion, which lasted for more than two hours, by concurring in the suggestion that all municipalities participating in the pension and insurance plan should meet representatives of the O.M.E.A. insurance committee and of the insurance companies involved in order to "discuss the matter."

At the same time, the convention went on record as following the example of District No. 6 in opposing the recent amendment to the Unemployment Insurance Act, whereby employees of public utilities are now included as being insurable "notwithstanding the fact that the said public utilities are owned and operated by the municipality and have been previously defined as a municipal authority."

Another resolution urging that a representative of the

O.M.E.A. be named an H.E.P.C. commissioner was also endorsed.

In launching the pension debate, Carl D. Hanniwell of the Niagara Falls Hydro-Electric Commission, who was on his feet on several occasions during the discussion, declared that, under the stress of war conditions, when they asked employees to continue their duties after reaching the retirement age, these employees should be permitted to draw their pensions.

It was claimed that employees who retired and received their pension could take work elsewhere, but that they could not enjoy the added benefit of the pension as long as they remained on the job they had been doing.

"I would like to know why they cannot get that pension as long as they retain their present occupation," demanded Mr. Hanniwell. "By all the laws they are entitled to it. They contributed to it. They should not have to resort to the subterfuge of having to resign and then being rehired again."

P. B. Yates, manager of the St. Catharines Public Utilities Commission, explained that the insurance committee

*(Continued on page 21)*



OFFICERS WHO will conduct the affairs of District No. 5, O.M.E.A., for the ensuing year were elected at the annual convention of that district at Paris. At the close of the business session, they obliged Hydro News by lining up for a picture. Miss Kathleen Ciceri, secretary of the O.M.E.A., who was also present, was persuaded to join the group, shown above. They are, front row, from left to right, Miss Ciceri, S. J. Wilson, Beamsville, vice-president; Roy Pierson, Brantford Township, president; Richard Thomson, Paris, vice-president; and George Austin, Dundas, secretary; back row, left to right, Robert Hunter, Dundas; Fred Barraclough, Beamsville; Carl D. Hanniwell, Niagara Falls; M. J. Conally, Cayuga; and Keith C. MacLeod, Stamford Township.





DURING THE afternoon business session of District No. 5, O.M.E.A., convention in the Paris community hall and at the dinner in the evening at the Paris Golf Club, camera impressions were recorded and are reproduced on this page.

The top left picture shows the members of the ladies' auxiliary of the golf club who, under the direction of Mrs. Harold Garner, the president, volunteered their services in the preparation of the dinner. The bottom left reproduction shows Roy Pierson, the new president of District No. 5, addressing the delegates, while the bottom right picture was taken during the afternoon meeting. The other three illustrations are "banquet shots."





## DEBATE PENSION PROBLEMS

*(Continued from page 19)*

could not do anything about the matter as they were bound by the agreement which was now in effect. "There is only one thing for this organization to do and that is to ascertain if the agreement can be changed," he said.

Keith MacLeod, chairman of the Stamford Township Public Utilities Commission, who is now past president of District No. 5, said that the O.M.E.A. insurance committee could not be blamed for the problems which had arisen. "No doubt," he said, "when this fund was started, that is one point that was overlooked. There was no war on and it was anticipated that every man would retire when he was 65. With the war on, we need these men. We cannot afford to let them retire and it has created a situation that requires adjustment."

Dr. W. J. Chapman, commissioner of St. Catharines Public Utilities Commission, presided during the election of the following officers for the ensuing year: President, Roy Pierson, chairman of Brantford Township Hydro-Electric Commission; Vice-Presidents, Richard Thomson, chairman of the Paris Public Utilities Commission; and S. J. Wilson, commissioner of Beamsville Hydro-Electric Commission; Directors: Fred Barraclough, chairman of Beamsville Hydro-Electric Commission; Keith MacLeod, chairman of Stamford Township Public Utilities Commission; mayor Robert Hunter of Dundas, and M. J. Conally, chairman of Cayuga Hydro-Electric Commission; Auditors: Carl D. Hanniwell, commissioner, Niagara Falls Hydro-Electric Commission, and mayor John P. McCammon of Paris.

The dinner in the evening was held at the Paris Golf Club where the active members of the club's ladies' auxiliary, under Mrs. Harold Garner, the president, rallied in a magnificent manner to provide a banquet which won a rousing vote of appreciation from the delegates.

After Roy Pierson, the new president, had called upon the ladies to take a bow, he delivered an address, during which he discussed the question of O.M.E.A. representation on The Hydro-Electric Power Commission of Ontario.

Kenneth A. Christie, K.C., president of the O.M.E.A., who was in attendance at the dinner, stated that the association had made great progress, and that 202 municipalities—cities, towns and villages—were now on the membership role.

Mayor McCammon of Paris, in addressing the banquet gathering, declared that if they had not had Hydro in Ontario they could not have turned out the implements of war in the way they had. Many men were giving to Hydro the kind of service which could not be bought and the people of the province were benefitting by that time, experience and thought.

Richard Thomson, chairman of the Paris Public Utilities Commission, who presided, said that as a result of "definite thought and close co-operation of the commissions who have operated during the past 30 years" the Paris commission had been able to pay off its debentures. He recalled having interviewed Sir James Whitney when Hydro was inaugurated, and declared that it was the duty of those who represented the municipalities to "guard Hydro services."

## LOOSE TALK COSTS LIVES!..



## HYDRO TO THE RESCUE

Hydro came to the rescue when activities at the Point Edward post office were completely disrupted by fire which gutted the building.

With a minimum of delay local Hydro officials made sufficient space available in their already crowded quarters, Hydro News learned from J. A. Bannister, secretary of the Utilities Committee. As a result, Postmaster J. F. Strangway and his staff were able to carry on their duties without undue dislocation of service and with little inconvenience to the public.

The Point Edward building accommodates the municipal Hydro office, the municipal clerk-treasurer and the Hydro secretary, who share joint offices.

## J. W. SHUTTLEWOOD PASSES

JACK W. SHUTTLEWOOD, aged 73 years, of the H.E.P.C. operating department, Eastern Ontario system, passed away at his home in Trenton recently.

Born in England, he came to Canada at the age of 18 and worked in a tannery and electric power plant at Hastings, Ontario. Later he joined the construction staff in the development of the Heely Falls generating station near Campbellford.

In January, 1915, he became floorman at Heely Falls G.S., which was then operated by the Eastern Power Company. Later, in that same year, Mr. Shuttlewood was transferred to Sidney G.S. near Trenton, where he remained until he was pensioned in May, 1940, after having completed more than 24 years' service with the Commission. He was a member of the Quarter Century Club.



# PORT ARTHUR—STEEP ROCK LINE TO DELIVER POWER THIS MONTH

**Announcement Made By Dr. Thomas H. Hogg, at District No. 3 O.M.E.A. Convention—Says Lakehead Mining Operations Will Not Materially Deplete Thunder Bay Power Reserves.**

**P**OSSIBILITY of another unit being installed at the Alexander Landing plant on the Nipigon river in the near future was indicated by Dr. Thomas H. Hogg, chairman and chief engineer of The Hydro-Electric Power Commission of Ontario, when addressing District No. 3 O.M.E.A. convention at the Twin Cities on October 5.

At the same time Dr. Hogg assured the delegates that lakehead mining operations would not materially deplete power reserves in the Thunder Bay district.

Discussing the construction of the new 110,000-volt line from Port Arthur to Steep Rock he predicted that it would be completed and ready to deliver power some time during November.

More than 200 delegates gathered for the dinner in the Royal Edward Hotel at Fort William, in the evening, when Dr. Hogg, the guest speaker, dealt with a number of problems of vital interest to the district.

"There have been two outstanding events bearing upon power supplies and loads for the Thunder Bay system.



T. C. JAMES, R. T. Jeffery, J. R. Pattison and Otto Holden can be seen in this group.

These are the successful completion of the Ogoki project and its effect upon the Nipigon river power resources of the Thunder Bay system and, the active construction work, which has been well advanced, in connection with the Steep Rock lake iron deposits," Dr. Hogg said.

"Indirectly the development of these great iron deposits may have a far reaching effect upon the economic status of the Twin Cities and upon the Hydro loads of the Thunder Bay district," he stated.

"Apart from the benefits to be derived from greater power development," continued Dr. Hogg, "the additional water added to the Great Lakes by the combined diversions

from the upper Ogoki river and Long lake will have the effect of raising slightly the levels of the Great Lakes and the interconnecting channels and of the St. Lawrence river. A further economic benefit that will result from the Ogoki diversion, as from the Long lake diversion, is the possibility of transporting pulp wood from the Ogoki river drainage basin to mills on the Nipigon river or in the vicinity of the cities of Port Arthur and Fort William.

"On the Nipigon river," the Hydro chairman stated, "the diversion will justify the installation of another unit at Alexander, probably in the very near future. The total amount of additional power that will result from these two diversions is as follows: On the Nipigon river 135 feet head is at present developed at the Commission's two plants at Cameron Falls and Alexander. There is an additional fall of about 100 feet which may be developed either at one or two sites. In these developed and undeveloped sites on the Nipigon river 4,000 cubic feet of water per second will provide for an increase of 90,000 continuous horsepower. From the Aquasabon river, down which the Long lake water now



AND HERE the camera was turned in the direction of: R. G. Walsh, K. A. Christie, K.C., Dr. T. H. Hogg, C. H. Moors, and mayor Garfield Anderson, Fort William.

flows to lake Superior, there is a possibility of developing 20,000 horsepower with the flow of 1,000 cubic feet of water per second from Long lake."

Continuing, Dr. Hogg said that the additional water supply secured as a result of the Ogoki diversion would be a valuable asset in connection with the supply of power to the Steep Rock iron mines.

It was anticipated, he said, that about 6,000 horsepower would be required for preliminary operations and possibly 16,000 horsepower at the time the diversion of the river puts out of commission the power plant of the Ontario-Minnesota Pulp and Paper Company and the pumping out





AMONG THE head table guests at the dinner in the evening were: Dr. M. P. Bengier, Port Arthur commissioner; Dr. Thomas H. Hogg, guest speaker; C. H. Moors, Fort William commissioner, and R. T. Jeffery, H.E.P.C.

INCLUDED IN THE lower right group are: H. E. Holland, chairman of the Sioux Lookout Hydro-Electric Commission; J. E. Cole, manager and secretary at Sioux Lookout, and Stanley Smith, of the Westinghouse Electric Company.

of the lake starts.

Dr. Hogg said that suggestions had been made for the production of iron sponge involving the use of hydrogen produced in large quantities by the electrolytic decomposition of water and that the Thunder Bay district low cost water power might profitably be developed for this purpose. He also declared that the problem was both economic and technical and would need to be approached from the mining company's standpoint with regard to the relative costs of various processes, but offered the co-operation of the Hydro-Electric Power Commission in engineering investigations from the power producing angle.

He also referred to the splendid financial showing of the local Hydro utilities and the excellent status of the Thunder Bay system as a whole. He warned of the need for adequate reserves pointing out that the district was

greatly dependent upon the prosperity of three big industries: pulp and paper, grain, and mining. The system must, therefore, be prepared to accommodate the demands of prosperous times and, in its financial reserves, be prepared to absorb the cost of maintaining and paying for power plants, which, in time of depression, might not be called upon to meet the same demands for power that they are meeting to-day.

In introducing Dr. Hogg as "a man well-known to all Canadians," R. G. Walsh, chairman of the Port Arthur Public Utilities Commission, recalled that the Hydro chairman was born at Chippawa on the Niagara river where, in all probability, were sown the seeds that influenced him to choose the profession of hydraulic engineering.

Dr. Hogg, continued the speaker, was a graduate of the University of Toronto which had honoured him with the degree of Doctor of Engineering and, in addition, had

(Continued on page 25)

HEAD TABLE GUESTS were: R. G. Walsh, chairman of the Port Arthur Public Utilities; K. A. Christie, K.C., president of the O.M.E.A., and R. B. Chandler, manager, Port Arthur Public Utilities.

HERE ARE L. G. Dandeno, superintendent of the Thunder Bay System; Lt.-Col. Murison; F. Greenslade, superintendent of the Kenora Public Utilities Committee; and W. H. Hambleton, clerk of Dryden Township.







**A**NOTHER leaf has been torn off the 1943 calendar, bringing us into November and to a realization that we must fortify ourselves, as best we can, against the bitter, biting blizzards of the winter months ahead.

Things are a little different this year. We must try to get along with less coal and fuel-oil, spinning out our supplies until Spring. By seeking, and following, the advice of heating authorities, we can do much to keep our homes comfortably warm with the supply of fuel available and, at the same time, make a worthwhile contribution to the winning of the war.

If there are any who may feel that they are being called upon to make a sacrifice or undergo terrible hardship, let them try to visualize conditions in the war zones. When they hear the wind howling round their homes and see the blinding snow piling up on their windows, let them think of the boys who are bucking that storm to speed the victory. Let them try to visualize the fury of a wintry sea, the ice-encrusted ships and the men who man and guard these ships against lurking u-boats. Yes, let them think of fox-holes and the boys who are crouched there, tense and ready but wondering if they'll ever see home again.

The fact is, that the most we can do at home is very little.

### Must Safeguard Health

It is our duty, however, not only to co-operate in exercising any necessary economies, but to safeguard our health in order that we may be fit for the vital work we have to do on the home front. To safeguard our health we must not only wear warm clothes in winter but we must eat the right kinds of foods.

Unfortunately, there is still some misapprehension as to the kind of heat-producing foods we should take. Hot foods are not always heat-producing. For example: a cup of cool cocoa produces far more heat than a cup of steaming clear coffee, because cocoa is a starch plus fat. Starches and fats speed up the circulation of the blood which governs the rate of heat production in the body. A most important point is regularity. You don't go down to the furnace and fill it with coal and wait until it burns out before you refill it. We all know the way to get the most heat out of the fuel is to use it moderately but regularly. The human body is stoked in the same way. It requires a good supply of fuel in the morning and at regular intervals throughout the day.

Canada is fortunate indeed that unlike the European countries there is no shortage of excellent fuel foods. It is fortunate that our basic foods have been shared, so that we receive adequate amounts through the careful use of them. The thrifty Scots in their raw, bleak climate, provide a good

example—breakfast: porridge with top milk, cheese and bread. Granted this menu is not exciting, but it is food that provides warmth.

### Protective Foods Important

Fundamentally, carbohydrates and fats supply heat and energy to the human body. Honey, sugar and whole grain cereals are most valuable. Porridge made from oatmeal, cornmeal, cracked wheat, is one of the best whole grain dishes. But there are many other grain products from which a selection may be made for the other two meals of the day. For example, there are biscuit mixtures, dumplings, pastries, macaroni, spaghetti, bread crumbs and manufactured cereal toppings. Of course, bread is our mainstay at each meal. Root vegetables may also be added to our starch list, frequently enriched by a cream sauce. It is not necessary to tell you to increase the use of fats—fats are precious in wartime—but the cold weather does offer us the opportunity to enjoy meat coated with fat, richer gravies and sauces than we care to eat during the summer.

Meat, fish and eggs fit into each meal as body-building and repair materials. While they are not heat-producing, citrus fruits, stewed fruits and raw vegetables must not be overlooked. They are protective foods.

### Valuable Cereal Food

By the way, do you use wheat germ in your home? Too few people seem to know about it. Wheat germ is taken out of the wheat at all milling companies where wheat flour is made. It's a valuable cereal food and fortunately it's cheap. Don't expect it to be a "cure-all"—since no one food is—but it does promote tissue building, stimulate the appetite and maintain digestive tone. The amount necessary is two tablespoons daily served on top of your cereal just as it comes from the package. It's an easy way to make sure of your Vitamin B.

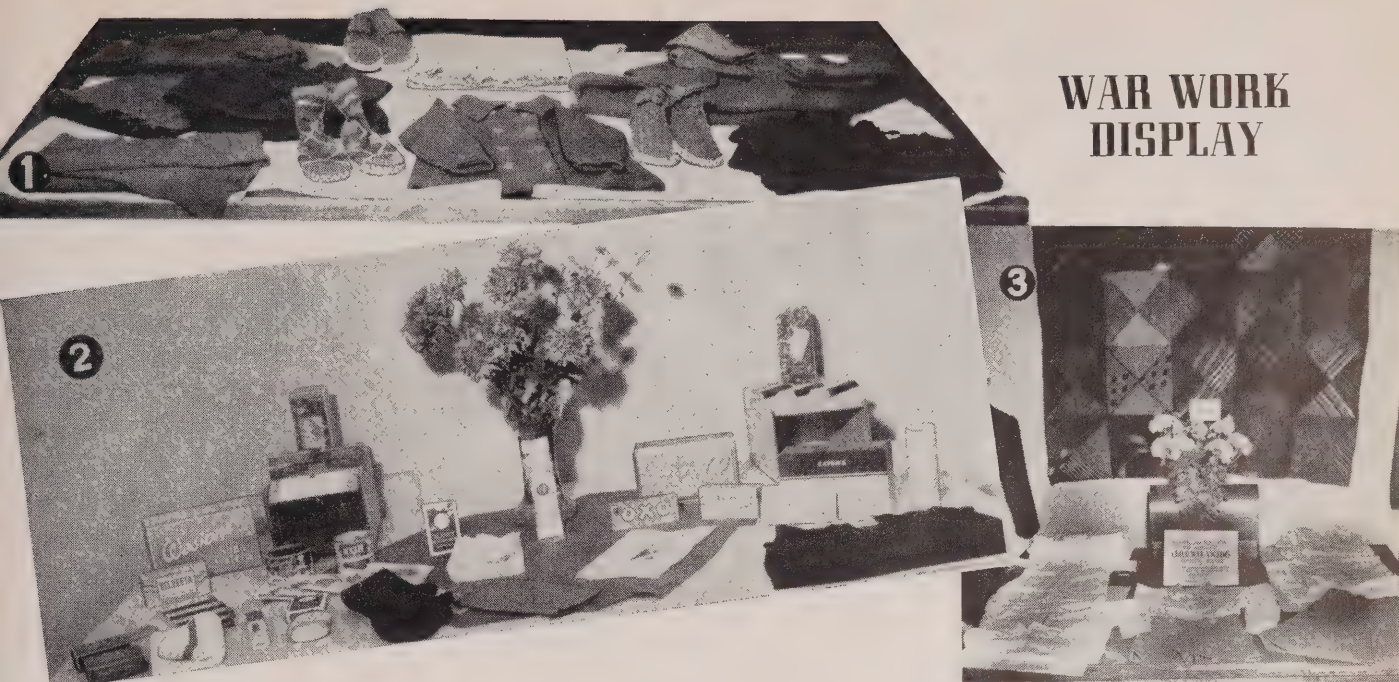
It is a good idea to buy your wheat germ in small quantities as it is not easily stored for long periods. If you seal it tightly in a glass jar, it will keep for at least a month. Be sure to store it in a cool, dry place—the electric refrigerator is just the spot.



JUST AS knights of old sought protection against adversaries in battle by wearing suits of armour and vizors, folks today should wear the right kind of clothes and eat the right kind of food as a protection against the blitz of winter, warns Miss Muir. The above sketches are intended to convey the idea. While not altogether "knightly" in appearance, the suggested "armour" is quite effective against the "nights of cold."



## WAR WORK DISPLAY



**T**HIS interesting display gives some idea of what the Ladies' Auxiliary of the Ontario Hydro-Electric Club do in their spare time. To date, since the auxiliary's inception in 1939, these ladies and their friends have completed approximately 3,000 knitted articles; over 2,800 sewn items, as well as 22 afghans and quilts. These very acceptable articles are distributed among the British Mine Sweepers Auxiliary; Canadian Red Cross Society; National Home and Orphanage, England, and other organizations while they are also sent to members of the staff in the Armed Services. The following are mem-

bers of the executive committee: Jane McDowall, general convener; Grace Bartlett, wool convener; Alberta McAllister, sewing convener; Celia Storey, secretary-treasurer; Helen Clements, assistant editor, Club News; Margaret Jeffery, comfort boxes; and fifteen representatives, one from each floor. Articles for children are shown in No. 1, while No. 2 directs attention to the contents of Christmas parcels for the boys overseas. The garments shown in No. 3 have been made for child war victims. In the background is a quilt made from old socks.

## PORT ARTHUR—STEEP ROCK LINE

(Continued from page 23)

called upon him to serve on the Senate of the University.

"He has been associated with the great Hydro-Electric Commission since 1913," stated Mr. Walsh. "Before becoming chairman and chief engineer he was chief hydraulic engineer, and has made an outstanding contribution to the growth and welfare of Hydro. I am sure only a few of us here tonight realize fully the importance of the service rendered to Hydro over a thirty-year period by our speaker."

Mr. Walsh stated that much had been said about the part played by Sir Adam Beck and his associates in founding Hydro. Sir Adam, he declared, had been a great organizer, a man of vision, with tenacity of purpose, who had seen the goal, and who had pushed on relentlessly towards it. The name of Sir Adam would be remembered for all time by grateful Canadians.

"But," he continued, "what of our speaker's contribution to Hydro. Since joining Hydro he has been associated with the design and construction of every power development on the Hydro system."

Power distributed had grown to a peak in excess of 2-1/4 million horsepower in 1942, while the number of consumers had grown to 560,000. At the same time, Mr. Walsh said, the rate for power had steadily declined.

Following the noon luncheon in the Prince Arthur Hotel in Port Arthur, Otto Holden, chief hydraulic engineer, H.E.P.C., told the delegates about the recently completed Ogoki diversion.

Another speaker at the noon luncheon, at which R. G. Walsh, chairman of the Port Arthur public utilities commission, presided, was K. A. Christie, K.C., president of the O.M.E.A., who outlined briefly the work being done by that organization and the action taken by other districts on questions vital to the interests of Hydro across Ontario.

During a discussion period it was learned that negotiations were proceeding with the Kam Power company for the purchase of its plant, while R. B. Chandler, manager of the Port Arthur public utilities, gave a paper on the processing of Steep Rock iron ore in which he declared that progress of the development indicates that this mine may be in production in 1944.

He pointed out that the ore analyses 61 per cent pure iron by weight and that in transporting charges alone a net figure of approximately \$365,000 might be saved in shipping and handling charges alone on each million tons should the ore be treated at the lakehead instead of eastern Canada.

Coupled with the production of pure iron at the lakehead would undoubtedly come subsidiary industries engaged in making secondary steel products all of which would greatly enhance the industrial position of the district.

C. H. Moors, vice-president of District No. 3, O.M.E.A., was chairman at the evening dinner, while Lt.-Col. Kenneth Murison proposed the toast to the King, and acting mayor George Bendell and mayor Garfield Anderson extended a civic welcome to the assembled delegates.



## QUARTER CENTURY CLUB

(Continued from page 11)

Dodds, William Scoon	Mun. Acctg.	Toronto.
Dowds, William	Operating	Toronto.
Drewry, C. E.	Municipal	Stoney Creek.
Duffy, George Joseph	Payroll	Toronto.
Ennis, Joseph Patrick	Operating	Niagara Falls.
Evans, William John	Laboratory	Toronto.
Farrow, Ellsworth Alva	Purchasing	Toronto.
Ferguson, Angus Carlton	Operating	Fraserdale.
Flannery, Daniel Thomas	Municipal Eng.	Toronto.
Flommerfelt, Cyrus (Sr.)	Operating	Chippawa.
Forsythe, Samuel Howard	Operating	Toronto.
Fortier, Alfred	Operating	Niagara Falls.
Frost, Edward Scott	Municipal Eng.	Toronto.
Gray, James Alexander	Accounting	Toronto.
Gray, Robert John	Accts. Rec.	Toronto.
Hanley, Auguste Columbus	Elec. Inspect.	Kingston.
Harding, Samuel	Operating	Niagara Falls.
Harrison, Frederick LaVerne	Strachan Ave.	Toronto.
Hayes, James Albert	Municipal Rural	Mitchell.
Herbold, David Gordon	Operating	Chippawa.
Hilliam, Samuel	Acctg. N.O.P.	Toronto.
Hodge, Edwin Hamilton	Operating	Niagara Falls.
Hodges, Frederick James	Operating	Wauhaushene.
Hodgson, Earl Andrew	Operating	Chatham.
Jackson, Walter	Operating	Niagara Falls.
Jenkinson, James	Operating	Niagara Falls.
Kells, Marshall Franklin	Operating	Niagara Falls.
Kerr, Hugh Findley	Operating	Niagara Falls.
Knisley, George Villiers	Operating	Cameron Falls.
Lane, Herbert Henry	Elec. Eng.	Toronto.
Leeming, Harry Horsfall	Elec. Eng.	Toronto.
Laffer, Archie	Operating	Clyde Forks.
Lightbody, Robert	Construction	Toronto.
Long, Russell	Operating	Campbellford.
Menzies, Henry (Harry) Geo.	Legal	Toronto.
More, Hugh Campbell	Payroll	Toronto.
Morgan, John Philip	Elec. Eng.	Toronto.
Murphy, Charles Ernest Fletcher	Costs Data	Toronto.
MacDonald, Harold Alexander	Operating	Campbellford.
MacKenzie, James Leonard	Operating	Niagara Falls.
MacKintosh, James	Hydraulic	Toronto.
MacPherson, Henry Melville	Hydraulic	Toronto.
McAuley, Donald Joseph	Municipal Acct.	Toronto.
McCaw, Herbert James	Elec. Inspect.	Toronto.
McCormack, Robert James	Operating	Walkerville.
McDowell, Elba Robert	Operating	Niagara Falls.
McKinnon, Chester Lloyd	Operating	Leaside.
McNamara, James Henry	Operating	Belleville.
O'Connor, Arthur John	Accts. Rec.	Toronto.
Patton, Albert Ferguson	Elec. Eng.	Toronto.
Pomeroy, William Henry	Accounting	Toronto.
Poste, Gardiner William	Operating	Belleville.
Pouchie, Michele (Pucci)	Operating	Niagara Falls.
Rice, Arthur Ryan	Approvals Lab.	Toronto.
Risler, William	Operating	London.
Robinson, William John	Mun. Eng.	Windsor.
Rowley, John	Operating	Niagara Falls.
Russell, William Earl	Operating	Toronto.
Scott, Daniel Ernest	Elec. Inspect.	Windsor.
Searway, Norman Alexander	Purchasing	Toronto.
Senior, Richard Henry	Payroll	Toronto.
Silcox, Harry Roy	Property	Toronto.
Smith, Frederick John	Laboratory	Toronto.
Smith, Norman Salvanas	Operating	Niagara Falls.
Smith, Robert Lawrence	Operating	Niagara Falls.
Staford, Richard H.	Municipal	North Bay.
Stephens, Charles Burwell	Elec. Eng.	Toronto.
Tinworth, William Stewart	Filing	Toronto.
Townsend, David Albert	Operating	Toronto.
Tuck, John Everett	Accts. Payable	Toronto.
Walcott, William Daniel	Laboratory	Toronto.
Wayman, Philip Francis	Construction	Toronto.
Wellman, Thomas Charles	Operating	Niagara Falls.
White, Clarence MacDougall	Operating	Wauhaushene
Wilson, Robert Caulderwood	Construction	Toronto.
Wilson, Victor	Elec. Eng.	Toronto.
Winson, Rupert Trevelyan	Accts. Rec.	Toronto.
Wood, Elvin Morley	Elec. Eng.	Toronto.
Yorke, William Edward	Operating	Niagara Falls.
Young, Thomas Ross	Operating	Niagara Falls.

## NEW METER READING SYSTEM

(Continued from page 17)

joint meeting as soon as possible."

Later in the same month, at a third meeting in Preston, proceeded Mr. Clement, it was learned that "a meeting of municipal auditors has been planned to draw up a standard system of accounting, to be used by all municipalities taking power from the Commission. A clear and intelligible system of accounting would be of service in overcoming the one possible argument against municipal ownership and operation."

Continuing, the speaker stated that in 1912 a system of uniform accounting had been prepared, based on the best judgment of electrical engineers and chartered accountants. That system, he pointed out, was revised in 1915, and is still in use.

In May of that year, stated the speaker, the Commission added a municipal auditor to the general staff in the person of R. C. McCollum. From that time until 1918, meetings were held periodically as the Engineering Section of the Ontario Municipal Electric Association. From these meetings emerged the formation of the Association of Municipal Electrical Utilities.

At the summer convention in 1930 when a round table conference on accounting matters was held, Mr. Clement said that a resolution was passed asking the A.M.E.U. to establish a standard committee on accounting. As a result, the following year, the Committee on Accounting and Office Administration was added.

In closing, Mr. Clement said, "It is due to the efforts of this committee that meetings such as the one we are attending today have been made possible."

## "FORT OF FREEDOM"

(Continued from page 7)

In replying to Col. Drew's address, Dr. Hogg declared, "We are very grateful for the words the Prime Minister has given us today."

The Hydro chairman said that they had many problems ahead of them—problems which, he felt, the staff of the Commission would have no hesitation in carrying out, knowing that behind them would be the support of the government.

Dr. Hogg said that two and a half million horsepower was being developed in Ontario at present and that was one of the reasons why Canada was the third largest exporting country in the world—something utterly impossible without the production—not of power—but hydro-electric power in its cheapest form.

Among those in attendance at the opening of the new DeCew Falls plant were Hydro officials whose united efforts were reflected in the job which had been done. They included John Dibblee, assistant chief engineer; Otto Holden, chief hydraulic engineer; H. J. Muchleman, operating engineer; A. H. Hull, electrical engineer; David Forgan, construction engineer; and Angus Richardson, superintendent on the job.

## REPORTED MISSING

Flying Officer **RONALD G. CARTER**, R.C.A.F., who was on the staff of the H.E.P.C. property department from June, 1939, to June, 1940, has been reported missing while in action over Germany.

Just a week prior to his being reported missing, he was awarded the D.F.C. for his part in an air raid over Spezia, Italy.



# SEPTEMBER LOAD FIGURES

THE monthly summary of loads records a primary load increase of 1.8 per cent, or approximately 40,000 horsepower, for September, 1943, as compared with the corresponding month of last year.

Based on the maximum 20-minute peak horsepower load for the period, the summary portrays load conditions on all four Hydro systems and the Northern Ontario Properties.

## PRIMARY AND SECONDARY LOADS

	Maximum 20-Min. Peak H.P.		Per Cent
	Sept., 1943	Sept., 1942	Increase
Niagara System	1,694,772	1,667,024	1.7
Eastern Ontario System	206,452	186,177	10.9
Georgian Bay System	52,772	48,139	9.6
Thunder Bay System	121,635	103,579	17.4
Northern Ontario Properties	249,192	263,853	— 5.6
Total of All Systems	2,324,823	2,268,772	2.5

## MUST MAINTAIN RESTRICTIONS

(Continued from page 15)

tion rendered by all concerned in dealing with the devastating results of this severe storm", said Dr. Hogg.

In a similar vein the speaker referred to the unusual floods experienced in Eastern Ontario earlier this year, particularly upon the upper waters of the Madawaska River.

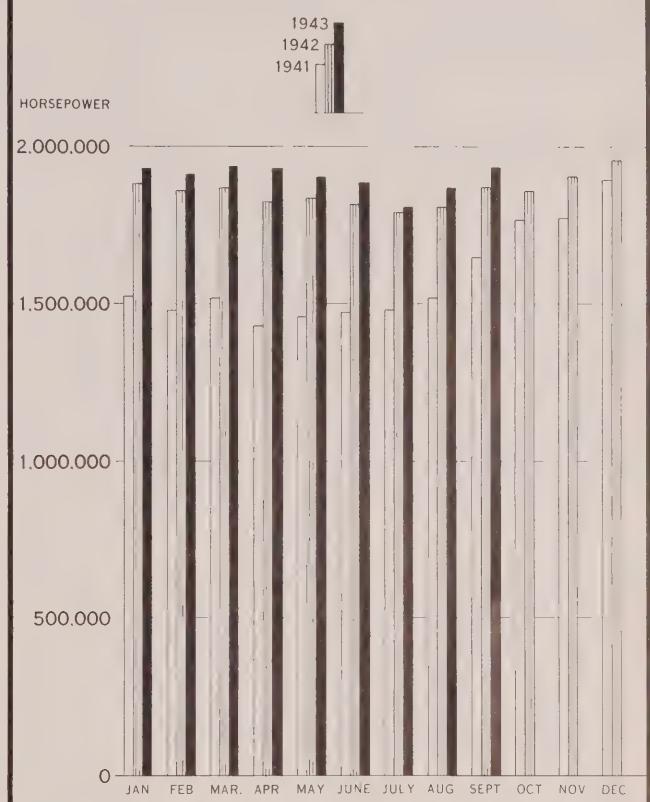
"There was some apprehension in various quarters," he said, "that in some way these floods resulted from, or were accentuated by, the works which had been constructed by the Commission. This was not so. They were due to very exceptional winter and precipitation conditions. Last winter was a severe one, with heavy snowfall, much of it of a wet character. Then in March and April, temperatures were low and the spring rains found the ground covered with unmelted snow and ice. Usually much of the winter precipitation passes into the ground or runs off before the rains come. This year the warm rains added their volume to the melting snows and thus there were, in many districts, river flows approaching record character."

The advantages which would result from the interconnection of the three southern Ontario power systems again received attention from Dr. Hogg.

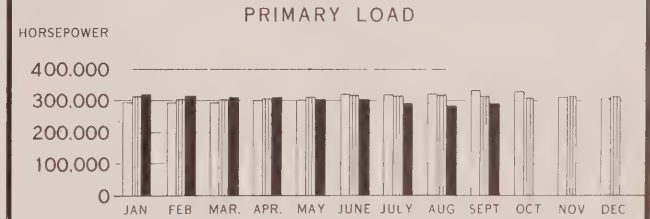
"Year by year as the complexity of the physical plant increases by interconnection and interchange facilities", he stated, "the advantages of a complete unification or amalgamation of the three southern Ontario systems becomes more evident. I regard eventual amalgamation in Southern Ontario as certain. Meantime, you in Eastern Ontario have been reaping very substantial benefits from the interconnection and interchange of power with the Niagara system."

Continuing, Dr. Hogg stated that from time to time the Commission had been asked whether, in view of the more encouraging progress of the war and the construction of new power plants, there would be a lessening of the restrictions now imposed on electric power uses in southern Ontario. He emphasized that no such relaxation was contemplated but that, on the other hand, it might still be necessary to ask for greater savings, which would be in the nature of a voluntary effort.

## SOUTHERN ONTARIO SYSTEMS NIAGARA — GEORGIAN BAY — EASTERN ONTARIO PRIMARY LOAD



## NORTHERN ONTARIO PROPERTIES AND THUNDER BAY SYSTEM PRIMARY LOAD



## PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	SEPT., 1943	SEPT., 1942	
NIAGARA SYSTEM	1,674,933	1,636,193	+ 2.4
GEORGIAN BAY SYSTEM	52,772	48,139	+ 9.6
EASTERN ONTARIO SYSTEM	206,452	186,177	+ 10.9
THUNDER BAY SYSTEM	101,233	100,871	+ 0.4
NORTHERN ONTARIO PROPERTIES	189,675	213,451	- 11.1
TOTAL	2,225,065	2,184,831	+ 1.8



# MUNICIPAL LOADS, AUGUST, 1943

## NIAGARA SYSTEM (25-Cycle)

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Acton	1,561	1,903	Erie Beach	33	21	Palmerston	559	1,400
Agincourt	207	P.V.	Essex	618	1,886	Paris	1,584	4,604
Ailsa Craig	157	487	Etobicoke Twp.	6,681	V.A.	Parkhill	214	1,029
Alvinston	90	649	Exeter	781	1,654	Petrolia	877	2,768
Amherstburg	892	2,704	Fergus	1,243	2,759	Plattsville	131	P.V.
Ancaster Twp.	364	V.A.	Fonthill	150	860	Point Edward	1,520	1,199
Arkona	54	403	Forest	596	1,562	Port Colborne	2,093	6,928
Aurora	1,416	2,821	Forest Hill	4,701	12,172	Port Credit	825	1,934
Aylmer	746	1,985	Galt	10,512	15,126	Port Dalhousie	1,177	1,599
Ayr	222	760	Georgetown	1,781	2,452	Port Dover	533	1,790
Baden	488	P.V.	Glencoe	185	763	Port Rowan	87	700
Beachville	710	P.V.	Goderich	1,674	4,674	Port Stanley	1,171	824
Beamsville	439	1,227	Granton	71	P.V.	Preston	3,996	6,656
Belle River	181	836	Grimsby	849	1,988	Princeton	136	P.V.
Blenheim	452	1,873	Guelph	10,024	23,074	Queenston	139	P.V.
Blyth	149	662	Hagersville	1,215	1,524	Richmond Hill	475	1,295
Bolton	230	629	Harriston	522	1,292	Ridgetown	509	1,986
Bothwell	109	683	Harrow	539	1,092	Riverside	957	5,235
Brampton	2,642	5,975	Hensall	176	686	Rockwood	134	P.V.
Brantford	19,751	31,622	Hespeler	2,564	2,938	Rodney	126	758
Brantford Twp.	1,026	V.A.	Highgate	90	322	St. Clair Beach	104	138
Bridgeport	155	P.V.	Humberstone	501	2,831	St. George	149	P.V.
Brigden	77	P.V.	Ingersoll	3,237	5,757	St. Jacobs	341	P.V.
Brussels	153	784	Jarvis	192	513	St. Marys	1,609	4,009
Burford	295	P.V.	Kingsville	485	2,453	St. Thomas	6,865	17,045
Burgessville	44	P.V.	Kitchener	23,874	35,456	Sarnia	9,784	18,599
Burlington	1,538	3,925	Lambeth	102	P.V.	Scarborough Twp.	4,179	V.A.
Burlington Beach	463	1,474	LaSalle	250	907	Seaforth	712	1,782
Caledonia	280	1,430	Leamington	1,481	6,048	Simcoe	2,259	6,340
Campbellville	35	P.V.	Listowel	1,518	2,984	Smithville	160	P.V.
Cayuga	97	700	London	34,740	77,105	Springfield	70	382
Chatham	5,588	17,184	London Twp.	435	V.A.	Stamford Twp.	2,614	8,275
Chippawa	295	1,228	Long Branch	1,197	4,258	Stoney Creek	214	933
Clifford	105	491	Lucan	206	643	Stouffville	351	1,198
Clinton	684	1,879	Lynden	113	P.V.	Stratford	7,537	17,163
Comber	139	P.V.	Markham	418	1,175	Strathroy	1,543	2,834
Cottam	57	P.V.	Merlin	69	P.V.	Streetsville	246	701
Courtright	42	355	Merritton	11,430	2,916	Sutton	474	949
Dashwood	112	P.V.	Milton	1,502	1,915	Swansea	2,532	6,907
Delaware	75	P.V.	Milverton	382	994	Tavistock	688	1,080
Delhi	334	2,430	Mimico	2,442	7,987	Tecumseh	460	2,331
Dorchester	85	P.V.	Mitchell	739	1,670	Thamesford	241	P.V.
Drayton	166	528	Moorefield	45	P.V.	Thamesville	205	816
Dresden	381	1,525	Mount Brydges	98	P.V.	Thedford	121	598
Drumbo	112	P.V.	Newbury	25	288	Thorndale	99	P.V.
Dublin	71	P.V.	New Hamburg	619	1,441	Thorold	2,355	5,284
Dundas	2,711	5,245	Newmarket	1,820	3,800	Tilbury	1,431	1,923
Dunnville	1,164	3,916	New Toronto	11,339	9,469	Tillsonburg	1,154	4,602
Dutton	244	830	Niagara Falls	9,363	20,371	Toronto	301,833	657,612
East York Twp.	6,249	41,578	Niagara-on-the-Lake	1,095	1,764	Toronto Twp.	3,466	V.A.
Elmira	1,304	2,069	North York Twp.	8,256	V.A.	Wallaceburg	3,669	4,802
Elora	478	1,185	Norwich	411	1,301	Wardsville	35	221
Embro	147	420	Oil Springs	163	541	Waterdown	261	867
Erieau	155	281	Otterville	100	P.V.	Waterford	424	1,294
						Waterloo	5,199	8,968



# MUNICIPAL LOADS, AUGUST, 1943

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Watford	398	1,023	Neustadt	40	431	Lakefield	346	1,301
Welland	10,300	14,899	Orangeville	764	2,558	Lanark	77	686
Wellesley	151	P.V.	Owen Sound	5,872	13,559	Lancaster	40	570
West Lorne	227	768	Paisley	117	730	Lindsay	3,628	8,345
Weston	4,343	6,165	Pentanguishene	1,003	4,177	Madoc	183	1,130
Wheatley	181	761	Port Carling	333	520	Marmora	130	1,004
Windsor	47,357	104,415	Port Elgin	683	1,415	Martintown	33	P.V.
Woodbridge	649	946	Port McNicoll	96	950	Maxville	104	811
Woodstock	7,372	12,339	Port Perry	369	1,175	Millbrook	76	749
Wyoming	61	538	Priceville	10	P.V.	Morrisburg	304	1,484
York Twp.	16,664	77,175	Ripley	99	420	Napanee	1,362	3,241
Zurich	154	P.V.	Rosseau	49	305	Newcastle	175	701
(25 and 66-2/3 Cycle)			Shelburne	295	1,053	Norwood	115	710
Hamilton	141,466	164,719	Southampton	713	1,467	Omeme	191	630
St. Catharines	29,970	34,541	Stayner	319	1,103	Orono	88	P.V.
Trafalgar Twp.	618	V.A.	Sunderland	81	P.V.	Oshawa	16,612	26,610
(66-2/3 Cycle)			Tara	128	510	Ottawa	31,570	150,861
Bronte	178	P.V.	Teeswater	130	873	Perth	1,782	4,197
Oakville	896	3,369	Thornton	39	P.V.	Peterborough	12,045	24,977
			Tottingham	91	532	Pictou	1,183	3,400

## GEORGIAN BAY SYSTEM (60-Cycle)

Alliston	433	1,700
Arthur	143	1,089
Bala	347	355
Barrie	3,888	9,559
Beaverton	372	941
Beeton	148	617
Bradford	225	1,041
Brechin	83	P.V.

Cannington	217	761
Chatsworth	87	333
Chesley	605	1,812
Coldwater	130	545
Collingwood	2,643	6,249
Cookstown	107	P.V.
Creemore	154	661
Dundalk	260	686
Durham	424	1,874
Elmvale	170	P.V.
Elmwood	63	P.V.
Flesherton	66	452
Grand Valley	144	645
Gravenhurst	1,160	2,261
Hanover	1,403	3,190
Holstein	19	P.V.
Huntsville	1,204	2,943
Kincardine	797	2,483
Kirkfield	25	P.V.
Lucknow	395	856
Markdale	198	776
Meaford	729	2,757
Midland	4,254	6,764
Mildmay	161	764
Mount Forest	594	1,936

Neustadt	40	431
Orangeville	764	2,558
Owen Sound	5,872	13,559
Paisley	117	730
Pentanguishene	1,003	4,177
Port Carling	333	520
Port Elgin	683	1,415
Port McNicoll	96	950
Port Perry	369	1,175
Priceville	10	P.V.
Ripley	99	420
Rosseau	49	305
Shelburne	295	1,053
Southampton	713	1,467
Stayner	319	1,103
Sunderland	81	P.V.
Tara	128	510
Teeswater	130	873
Thornton	39	P.V.
Tottingham	91	532
Uxbridge	382	1,480
Victoria Harbour	117	979
Walkerton	996	2,534
Waubushene	159	P.V.
Warton	283	1,750
Windsor	79	117
Wingham	698	2,149
Woodville	61	439

## EASTERN ONTARIO SYSTEM (60-Cycle)

Alexandria	177	1,976
Apple Hill	56	P.V.
Arnprior	1,303	4,019
Athens	138	626
Bath	60	325
Belleville	7,312	15,498
Bloomfield	146	636
Bowmanville	2,745	3,850
Brighton	484	1,462
Brockville	4,713	10,576
Cardinal	379	1,602
Carleton Place	1,859	4,143
Chesterville	272	1,094
Cobden	80	643
Cobourg	2,294	5,907
Colborne	227	960
Deseronto	233	1,002
Finch	106	396
Frankford	160	1,095
Hastings	120	823
Havelock	102	1,103
Iroquois	240	1,123
Kemptville	369	1,230
Kingston	13,020	29,545

Lakefield	346	1,301
Lanark	77	686
Lancaster	40	570
Lindsay	3,628	8,345
Madoc	183	1,130
Marmora	130	1,004
Martintown	33	P.V.
Maxville	104	811
Millbrook	76	749
Morrisburg	304	1,484
Napanee	1,362	3,241
Newcastle	175	701
Norwood	115	710
Omeme	191	630
Orono	88	P.V.
Oshawa	16,612	26,610
Ottawa	31,570	150,861
Perth	1,782	4,197
Peterborough	12,045	24,977
Pictou	1,183	3,400
Port Hope	2,511	4,997
Prescott	1,443	3,283
Richmond	69	428
Russell	62	P.V.
Smith's Falls	2,802	7,741
Stirling	331	947
Trenton	4,652	8,183
Tweed	242	1,181
Warkworth	72	P.V.
Wellington	283	948
Westport	93	725
Whitby	1,448	4,236
Williamsburg	103	P.V.
Winchester	367	1,017

## THUNDER BAY SYSTEM (60-Cycle)

Fort William	13,740	30,370
Nipigon Twp.	187	V.A.
Port Arthur	20,107	24,217

## NORTHERN ONTARIO PROPERTIES

Nipissing District (60-Cycle)		
North Bay	4,141	16,013
Patricia District (60-Cycle)		
Sioux Lookout	299	1,967
Sudbury District (60-Cycle)		
Capreol	225	1,660
Sudbury	8,818	35,812



A black and white illustration of a man in a light-colored shirt and dark suspenders, smiling as he holds a small, detailed model of a power plant. The model has several windows and a chimney. He is holding it over a landscape that features a winding river, a small town with houses, and several high-voltage power transmission towers with lines stretching across the scene. The background shows a cloudy sky.

# The HEART of HYDRO

● Hydro is a living thing. It takes people . . . their hands and brains and hearts . . . to keep Ontario supplied with power in uninterrupted flow.

Producing power for Ontario's needs is Hydro's number one job. A veritable army of men is required to keep this power flowing at peak efficiency. For Hydro is much more than mighty power plants . . . much more than the transmission lines you see striding through the countryside.

Hydro is the employees who keep the power plants producing, who guide and co-ordinate the constant flow of energy through the transformer stations. It is the employees who patrol the lines that carry power to far-off mills and mines, to roaring industrial plants, busy stores and offices, comfortable homes, peaceful farms.

Hydro is the families of those employees who have set up their homes in city and town and country . . . and, perchance, deep in the isolation of wilderness and forest.

It is these . . . and all the other co-operative men and women employees . . . who have put life into Hydro, made it a living organization devoted to the benefit and service of Ontario.

Just now their efforts are directed mainly to producing power for victory and essential uses, but, after the war, they will be ready again to provide the full peace-time service so essential to the development and progress of this province.

Yes! The heart of Hydro is people . . . employees and consumers alike . . . both necessary . . . both partners in a great public enterprise. For today . . . as in the past, and in the future . . . the success of Hydro is dependent on both the faithful service of the employee and the wholehearted support of the consumer.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

**ELECTRICITY  
IS A  
WAR WEAPON  
*Save it!***



# HYDRO News



LINE PATROL 1943



**OUR WAR PLANTS  
NEED MORE POWER**

# Save HYDRO

- Back of the guns and tanks . . . the men and machines . . . a mighty flow of Hydro power supplied from Hydro generating plants and transmission lines.
- Foot by foot, through weeks—months—years, under all conditions, over 7,000 miles of Hydro transmission lines and towers have been brought into being by your Hydro's army of surveyors—engineers—linemen. Ceaseless planning—working—building.
- Hydro lines carry over 2,000,000 horsepower, but more and more power is required by war industries. This demand must be met—it is the duty of all to conserve electricity for war production.
- The homemaker can save electricity in the kitchen and throughout the house; the office man, business man, shop-keeper—each can give more power to our war industries by saving some electricity every day. Do your part—start now to use Hydro sparingly.



**THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO**

**When shopping take your change in War Saving Stamps**



# HYDRO News

*formerly The BULLETIN*

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

PUBLISHED BY THE HYDRO-ELECTRIC  
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HON. GEORGE H. CHALLIES, M.L.A.,  
COMMISSIONER.

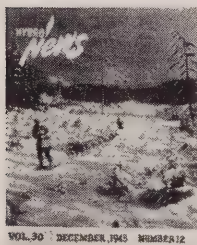
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## The Front Cover



VOL. 30 DECEMBER, 1943 NUMBER 12

**T**HIS month's front cover subject, entitled "Line Patrol," is taken from a painting by H. H. Leeming of the Commission staff. It portrays a section of the 113-mile line between the Uchi mine and Crow river in the Patricia District. The picture shows Hydro line-men with their dog team on patrol duty near the Uchi mine in the winter.

Volume 30

December 1943

Number 12

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**C**HRISTMAS EVE! The night Santa comes!

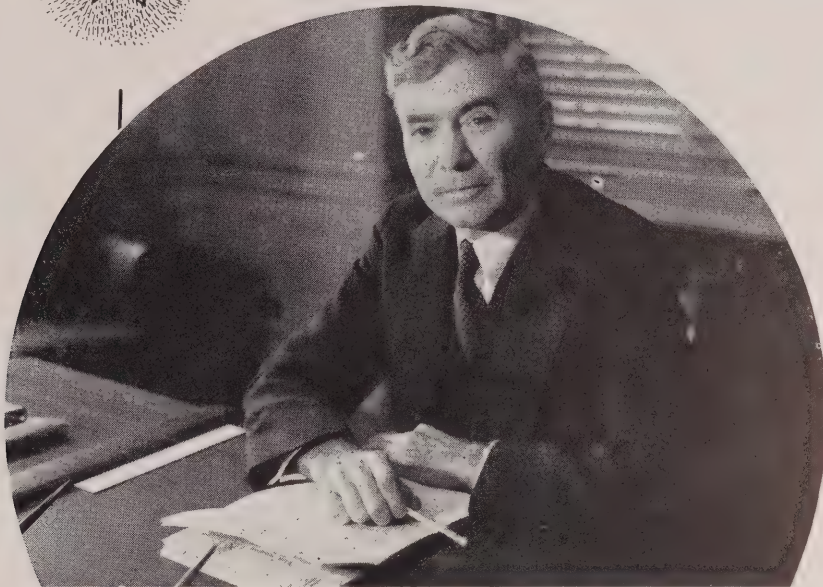
Of course there's a Santa Claus. Little Tommy knows it—just as sure as there are fairies who gather round him to listen as he kneels beside his cot.

Hasn't he hung up his little stockings in front of the big, brick fireplace? And hasn't daddy decorated the pretty tree in the corner with lots of shiny things? Sure Santa's coming.

What was that? Seemed like a noise in the chimney. Tommy excitedly bounds off mummy's knee and then quietly, almost stealthily the little fellow, now in his pyjamas, approaches the fireplace. And then . . . "Is that you, Santa?"

That question, and the scene portrayed above, will be heard and enacted on Christmas Eve in homes across Canada and in other lands where little folk can still be told about the Child who was born in a manger in Bethlehem.





## Christmas Thoughts

*AS we survey the panorama of fast-moving events of the past year — events which have brought about a dramatic change in the fortunes of war—we approach our fifth war-time Christmas in a spirit of confidence and optimism which is tempered by the knowledge that the task still ahead is one of considerable magnitude.*

*And as we pause briefly to join the festivities of this season, let us unite in solemn contemplation of the spiritual significance of Christmas and give thought to the unfortunate peoples of war-torn lands. Let us all rededicate ourselves with renewed zeal and determination to our respective tasks that Hydro throughout this province may continue to play to the full its vital part in speeding the day when peace and goodwill will supplant aggression and brutality.*

*It is in this spirit and with this hope that I take the opportunity of again extending sincere greetings to all members of our great Hydro organization wherever they may be. And as we go forward to the New Year, may we all catch a glimpse of the great responsibilities and opportunities of the post-war era when we will be called upon to make our contribution to the building of a greater Canada and a happier world.*

*J. H. Noyz*

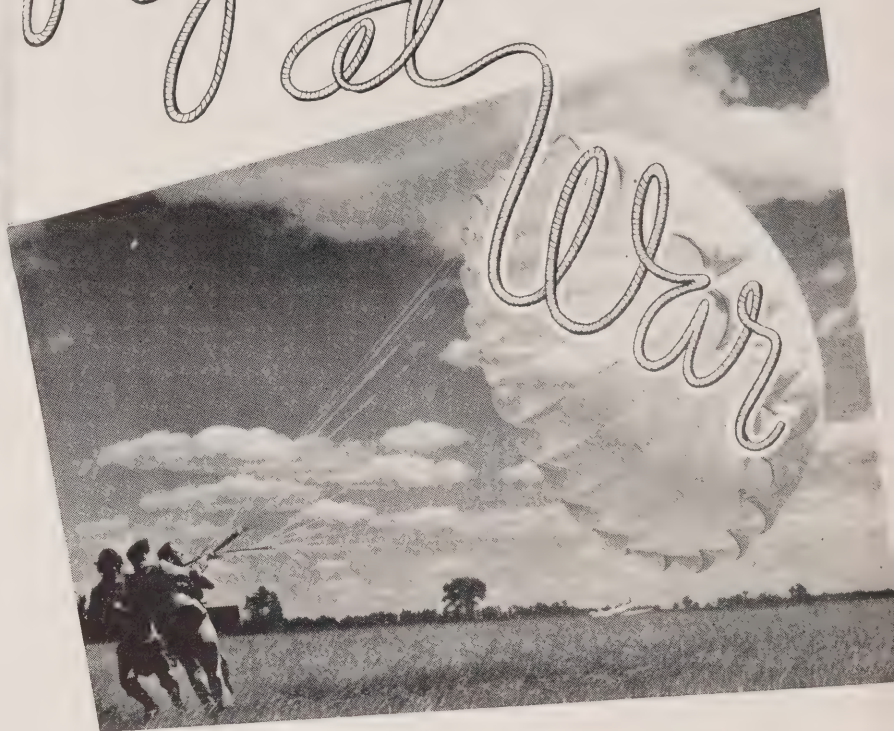






If ladies feel "let down" because they can't get nylon hosiery, they can console themselves with the fact that this yarn is doing a number of important war jobs including that of "letting down" our fighting airmen safely. The illustrations above symbolize the transition of nylon from peace to war.

# Nylon's at War



**F**ROM glamour to glory—that is the wartime transition of nylon.

When first put on the market in 1938 this synthetic fibre of "superman" strength was used extensively for feminine hosiery. Today, nylon is utilized almost exclusively for military purposes. It's a fighting yarn.

The entire production of the Nylon Division, Canadian Industries Limited, located at Kingston, Ontario, is at the present time used for the manufacture of parachute cloth, shroud lines, tapes and sewing thread, and Hydro is supplying 1,600 horsepower required to drive the service and processing machinery and provide adequate lighting. This power is brought to the modern four storey brick building over a specially constructed 44,000 volt line from Portsmouth Junction.

The main process areas of the four-and-a-half million dollar plant are completely air conditioned and the circulation fans and pumps are motor driven. Fluorescent lighting units throughout the building provide the necessary high intensity illumination.

To produce uniform thread, the machines for spinning the nylon filament must be operated at a constant speed. These machines are, therefore, driven by synchronous motors and the frequency of the power supply is automatically maintained, within very close limits, by the H.E.P.C.

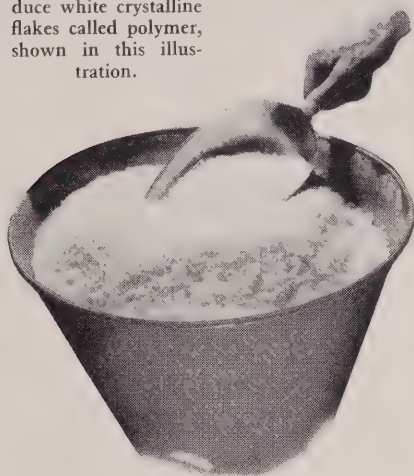
Discovered more than twelve years ago by Dr. Wallace H. Carothers, a widely known chemist, nylon was the result of research along the lines of synthesizing large molecules to make useful substitutes for natural products such as silk, rubber and resins. After much painstaking and untiring work, something happened which was destined to become of very practical value. In attempting to remove a sample of a molten long chain super-polymer from the still in which it was prepared, one of the chemists noted that the molten polymer could be drawn out in the form of a long fibre, somewhat like silk. It was also noted that, even after the fibre had become cold, it could be further drawn several times its original length. This had never been observed before.

However, it was not until 1938, after persistent study, that research produced a fibre which was strong, elastic and water-resistant, and could be drawn or spun into spider-web filaments that could in turn be twisted into thread or yarn.

Without becoming too technical, nylon is actually made from phenol (carbolic acid), derived from soft coal, and ammonia which is made by combining hydrogen from water with nitrogen from air. Other raw materials may be used for making other kinds of nylon, (this name being given to a whole family of materials) but for textiles and



COAL, AIR and water are combined in an intricate commercial process to produce white crystalline flakes called polymer, shown in this illustration.



bristles it is made from coal, air and water and these are combined, through an intricate chemical process, to produce white crystalline flakes called polymer. Of course, these raw materials require much processing to manufacture them into nylon, and rigid control at each and every step is essential.

But, briefly, these flakes or polymer pass from a hopper by gravity to melting blocks and, in the form of a molten gooey compound, still flowing by gravity, pass to spinnerettes from which they are extruded in fine spider-web filaments, 23 at a time. These are automatically gathered together and twisted to form nylon yarn which is then wound on spools, ready for textile use. These fibre strands wind on the spools at thirty miles per hour and, it is estimated, that ten pounds of crystal flakes yield approximately 300 miles of fibre.

Ladies were particularly interested to learn that from the chemist's test tube had come gossamer filaments of yarn, having the strength of steel, which were destined to become sheer feminine hosiery. To find a stocking that was sheer, sturdy and elastic was decidedly "the answer to a maiden's prayer." And another advantage was found in that the yarn being highly water-resistant meant nylon stockings dried very quickly—much faster than rayon, cotton or silk.

It has been proven that mildew and mould will not grow on this synthetic fibre and it is not attacked by moths. Extensive tests on over 400 persons have shown nylon yarn to be harmless to the skin. In fact the material is used, with wide acclaim, for surgical sutures. Doctors have found it to be even and smooth, making it less irritating than natural gut to sensitive body tissues. Being non-porous, there is a minimum of danger of the sutures carrying infection to other parts of the body and, their smoothness makes them easier to withdraw when the wound has healed.

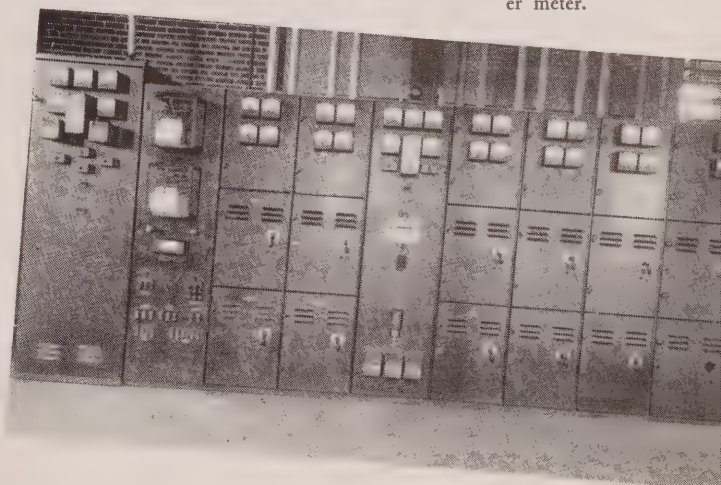
Among the multitudinous uses for this unique fibre, which may be extruded in multiple filament form or as single or monofilament, are knitted goods, woven dress materials, lace, bathing suits, upholstery, gloves, sewing

INCLUDED IN the above array of materials are nylon yarn, thread, cord, rope, webbing and parachute cloth, all vital equipment in offensive warfare.

IN THE PICTURE at the left the girls are shown making a careful inspection of the seams of a finished parachute.



MAIN SWITCH-BOARD (below) controls, measures and records power supplied and distributed to the plant. At the extreme left is the frequency recorder meter.



thread, fishing lines and leaders and all types of bristles. Unlike boar's bristles, the best in nature, nylon monofilament bristles do not split, fray or break and have been



found to wear at least two or three times as long as the best natural bristles.

Tennis players too, will welcome the advent of nylon, for with racquets strung with this sturdy, water-repellant filament, they will not have to worry about being caught in a summer shower. The musician will also benefit when his instruments are strung with nylon strings that will not loosen or contract with changing atmospheric conditions and yet have the same perfect tone that has been obtained from gut.

But the qualities of strength and elasticity combined with light weight that have made this material so appealing and valued, especially to the ladies, are also essential for textile articles used in modern warfare—and in particular, the parachute.

In making an airman's life preserver, the material must be light and compact and yet have great strength and elasticity in order to withstand the impact shock which occurs when the airman jumps from his plane and the parachute opens. Because nylon possesses these combined characteristics to a greater degree than any other natural or synthetic fibre, and because it is lighter in weight, more uniform in quality and 50 per cent stronger than silk, even if silk were available in sufficient quantities—the chemist's filament is essential in the making of parachute

canopy cloth, ropes, cords, webbings and threads.

And so the ladies should not feel unduly upset at giving up their short-lived "find," for it takes all the yarn required for twenty dozen pairs of stockings to make a parachute. Or in other words, two miles of thread go into a pair of stockings, and about 500 miles in a parachute. In being denied, at least until after the war, the luxury of nylon hosiery and other domestic commodities, would-be consumers are contributing to the war effort in the battle of the supply lines.

But these are not the only wartime uses of nylon. Today, the availability of nylon cord has made possible the production of light, strong tires for service on the giant bombers which are now carrying the offensive to the Axis nations.

These tires, it is claimed, are turning in performance records that far outdistance the finest tires of rayon or cotton cord construction, and their greater body strength withstands the punishment of high speed landings and extra heavy loads. Their lighter weight means also that a greater bomb load can be carried for a longer distance.

Although no one would attempt to predict the future of this unique synthetic fibre, it is almost certain that the development of nylon tires for bombers points the way to lighter, stronger and safer tires for cars and planes of tomorrow.

High speed machines wind the nylon yarn as it whirrs from the manufacturing bobbins to the spools. Once on the spools the yarn is ready for shipping. The picture below shows a lady operator, attired in shirt, overalls and turban, in attendance at one of these machines.



# RURAL HYDRO CONSUMERS TO HAVE UNIFORM RATE

**Kilowatt-hour Rates Of 4, 1.6 and 0.75 Cents Effective January 1, 1944—Service Charge Eliminated For Farmers, Reduced 50 Per Cent In Hamlets—All Rural Power Districts Amalgamated Into Single Operating Organization**

**U**NIFICATION of the existing 120 rural power districts; elimination of the service charge to farmers; reduced service charge to all remaining rural consumers, and a uniform kilowatt-hour rate for all rural electrical service throughout Ontario will become effective January 1, 1944.

The new rate structure will provide substantial benefits to the majority of the 130,000 rural consumers in the province, with 97 per cent of farm consumers and 98 per cent of consumers in hamlets receiving lower Hydro bills. Based on the amount of power used during the month, the new rates will be 4 cents per kilowatt-hour for the first kilowatt-hour block of energy used; 1.6 cents per kilowatt-hour for the second kilowatt-hour block; and 0.75 cent for all remaining consumption.

While it is estimated the total annual revenue from rural consumers will be reduced by more than a half-million dollars, the Ontario Government has undertaken to reimburse The Hydro-Electric Power Commission for any financial deficit resulting from adoption of the new rate schedules.

## Greater Operating Efficiency

Under the present system of rural operation, each rural power district is operated as a separate unit and each has its own set of rates, whereas the amalgamation of all districts into a single provincial rural power district, with one standard set of rates and one balance sheet, permits of more efficient operating and accounting practice and more economical administration. Similarly, the reclassification of the present eleven service customer classes into five clearly defined classes (2-wire lighting; 3-wire lighting; farm; commercial; and summer cottages) greatly simplifies the problem of customer classification and billing.

Only a very small percentage of farmers and hamlet consumers will receive no rate reductions, these consumers being in areas which already enjoy very low kilowatt-hour rates. Summer cottagers will pay approximately the same as at present, but a new system of billing has been arranged which will be more convenient for this class of consumer.

Under the new rate structure, service to a standard or average farm will be supplied at 4 cents per kilowatt-hour for the first block of 60 kilowatt-hours; 1.6 cents per kilowatt-hour for the second block of 180 kilowatt-hours; with a third rate of 0.75 cent for all remaining monthly consumption. The farm service charge has been entirely removed.

A minimum bill of \$2.25 gross will be adopted for the standard farm, while for larger farms the Commission has devised suitable blocks of power and minimum bills—all subject to a discount of 10 per cent for prompt payment.

In the case of hamlet or small lighting consumers, the service charge has been reduced to 55 cents per month. The promotional rates will be 4 cents per kilowatt-hour for the first block of 40 kilowatt-hours; 1.6 cents per kilowatt-hour for the second block of 80 kilowatt-hours; and a third rate of 0.75 cent for all remaining monthly consumption.

The minimum bill for this type of service will be \$1.50 gross. Suitable blocks of kilowatt-hours and minimum bills have likewise been established for larger lighting consumers in rural areas—all subject to the 10 per cent prompt payment discount.

## Examples of New Rates

The following examples show the effect of the new rates on the monthly bills of farmers and lighting customers in high-rate and low-rate districts.

(a) A standard farm customer using 100 kilowatt-hours per month:

PRESENT MONTHLY BILL	
IN HIGH-RATE DISTRICTS .....	\$4.31
PRESENT MONTHLY BILL	
IN LOW-RATE DISTRICTS .....	2.92
UNDER NEW PROPOSED RATE	
THE BILL WOULD BE .....	2.74

(b) A hamlet consumer with a lighting service using 60 kilowatt-hours per month:

PRESENT MONTHLY BILL	
IN HIGH-RATE DISTRICTS .....	\$3.16
PRESENT MONTHLY BILL	
IN LOW-RATE DISTRICTS .....	2.21
UNDER NEW PROPOSED RATE	
THE BILL WOULD BE .....	2.23

## Many Advantages Foreseen

The new rural rate schedule has been designed primarily to benefit those farmers and hamlet consumers living in high-rate districts and working marginal lands. By equalizing rural Hydro rates, it is believed this assistance will result in an increase in the amenities of rural life and give added impetus to Ontario agriculture. The changes are also expected to result, particularly after the war, in a better and more stabilized economic structure. It is believed that the new rates provide Ontario with the lowest general basis rural rates in the world for service supplied under similar conditions.

Rural electrification in Ontario began in a small way almost 25 years ago and today the Commission is serving 135,000 rural consumers, of whom more than 60,000 are farmers. The 20,000 miles of rural primary lines extending throughout the Province have been installed at a total

*(Continued on page 21)*





TAKEN

# FOR A RIDE

THIS IS A bird's eye view of the artificial island and the causeway linking it with Goat Island on the American side of the treacherous rapids at Niagara Falls where a submerged weir has been built.

**S**PANNING approximately half a mile of tossing, turbulent water at the brink of the treacherous rapids near Niagara Falls between the Canadian and American sides of the river is an overhead cableway which is capable of carrying a ten-ton load.

On a recent visit to this area, Hydro News had the thrilling experience of taking a ride in an "inspector's car," which is operated over this electrically-controlled aerial route. From this car, it is possible to obtain a close-up view of the submerged weir which has been built in the Niagara river.

The project is designed to perform several functions. By redistributing the flow of water so that a greater quantity passes down between the two ends of the weir and the Canadian and American shores, it will lessen the process of erosion at the Horse Shoe Falls and, at the same time, make possible the generation of additional power on both sides of

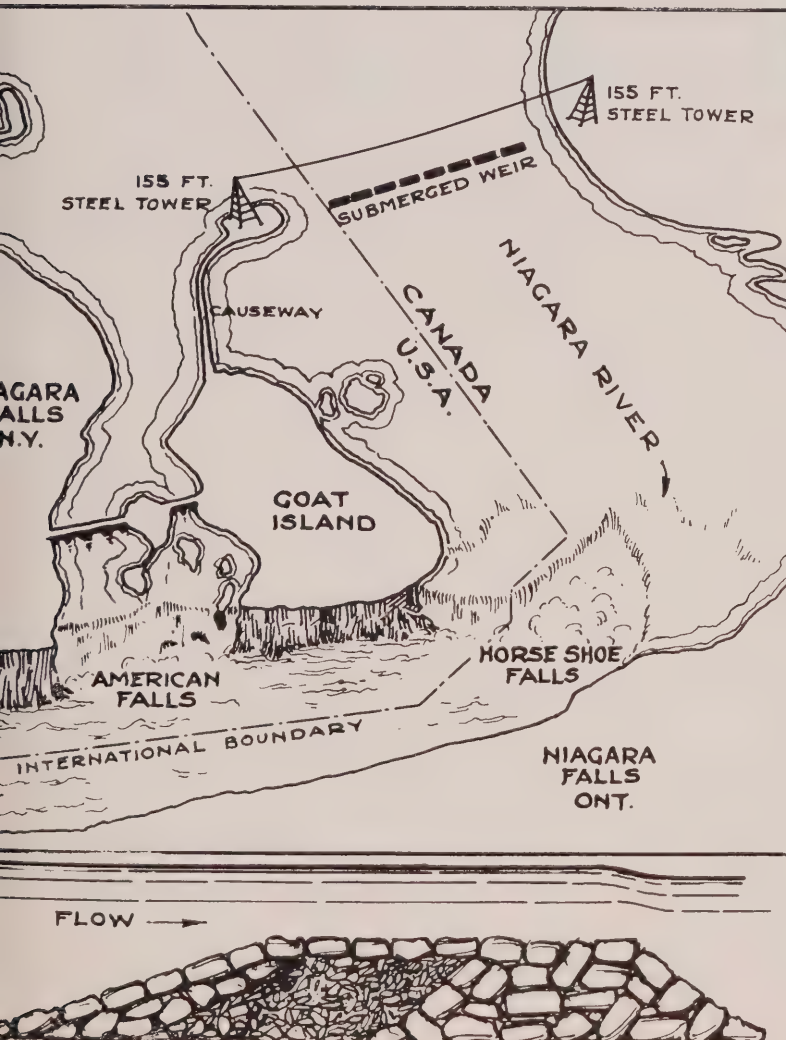
the International Line. In other words, it maintains the appearance of the American Falls, by causing a greater flow there, and increases the level at the intake of the Hydro's Queenston plant and of the American Power plants.

In undertaking the project, engineers were first confronted with the necessity of erecting a cableway which would be capable of conveying massive rocks and depositing them in the right place in the river. The first step was the creation of an artificial island off Goat Island on the American side, the two islands being linked by a 2,200-foot causeway. On the artificial island, and on the Canadian side of the river near Chippawa, massive steel towers were erected. Each tower, weighing approximately 500 tons, including counter-weights, tapers up from a broad base to a height of 155 feet. The wheel bases of both towers rest on standard gauge rail tracks, one track being tilted at about a 45-degree angle to help counterbalance the pull on the



ONE OF THE massive boulders used in building the weir is shown as it is hoisted off the ground by the crane in the illustration on the left, while the lower picture was recorded as a rock was being conveyed along the cableway to the point where it would be deposited in the river.

ON THE LOWER left side of the page is an artist's drawing of the weir and cableway, showing their relation to the Falls, the artificial island and causeway off Goat Island. At the bottom of the page is a sketch depicting a cross-section of the weir.



towers, while heavy slabs of concrete provide additional counterweight.

#### Used Kite and Piano Wire

After the towers had been erected the next problem was that of getting a 2½-inch steel cable across the half-mile stretch of twisting rapids. Last year, Hydro News featured a story which told how this feat had been accomplished by tying fine piano wire to a large box kite which with a favourable wind, was flown from the Canadian side of the river to the artificial island on the American side. Actually, the kite was sent aloft 2,000 feet down-stream from the tower on the Canadian side. Unexpected success was attained on the very first venture, and the piano wire was used to pull over a wire of greater diameter. A tedious sequence of operations followed as heavier wire was spliced to lighter wire and pulled across until eventually the 2½-inch steel cable had been hauled over to form the 2,605-foot cableway which is now linked to the two towers. The head tower, with controls and hoisting equipment, is located on the Canadian side.

With the completion of this cableway, engineers were



able to proceed with the construction of the weir which is 1,200 feet long and 9 feet at its highest point. The original width was 40 feet, but work is now proceeding to increase this width to 70 feet—a measure which is designed to counteract ice conditions and safe-guard the weir.

E. K. Beam, resident Hydro engineer, on the project, explained to Hydro News how the cableway conveyor dropped each rock in position by means of signals from a transit station located about 1,000 feet from the head tower.

From the bank of the river the location of the weir, which starts about 400 feet from the Canadian shore, can be detected by the white caps tossed up by the water as it sweeps over the now completed weir in its onward rush to the cascading descent over the Falls.

## Misgivings Quickly Dispelled

When the rock conveyor had been replaced by the "Inspector's car," Hydro News in company with Hydro engineers, embarked upon the cableway journey across the rapids to view the under-water dam.

Upon entering the "car," which might best be described as something between an air-conditioned sentry box

and an outsized bird cage, members of the inspection party took up assigned positions. The radio operator checked the communication system and established contact with the control operator whose quarters are high up in the inter-lacing steel network of the head tower.

At this point, the door of the "cage" was bolted, colleagues who remained behind were saying something about "It's been nice knowing you fellows," and then the car was whisked into the air.

Any misgivings this impromptu sentiment might have created in the minds of the "travellers" were quickly dispelled for, beyond a little swing and sway, the trip over the river was quite smooth and uneventful. There was, of course, that sense of adventure and exhilaration associated with any journey or undertaking which brings one into a danger zone: and, after all, the rapids at Niagara Falls cannot be regarded as a safe area.

There were thrilling moments. For instance as the car or "cage" begins to sag down lower and lower to the centre of the rapids, there is a tendency to think of such things as piano wire and kites and to contemplate these little whirlpools in the river with a fascinated interest. Involuntarily, one glances above to scrutinize the steel cable. But the car sways gently along and the weir itself then monopolizes attention. The outlines of the top tier of massive rocks can be seen below blue-green film of rushing water. Even the layman can catch something of that spirit of pride and achievement experienced by the engineer who has had a part in creating a project which has compelled Nature to "back up" in a very literal sense.

The car then reaches the tail tower on the American side and it sways down and comes to a stop with a bump on the artificial island. When you step out you are *under* the Stars and Stripes. The return journey is even less eventful. You feel quite at home in the cramped little car . . . even over the centre of the rapids.

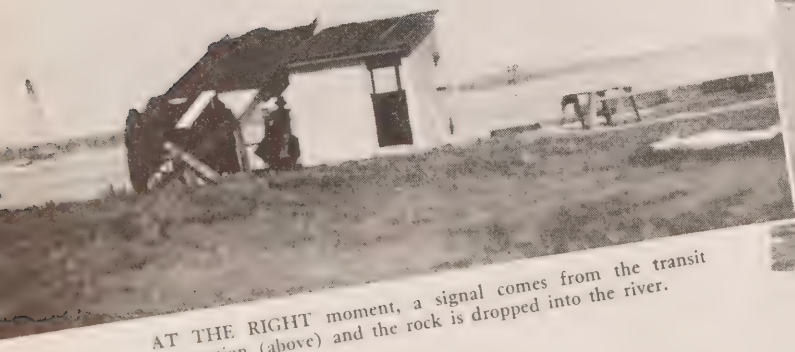
Back on Canadian soil again you admit that being taken for a ride is really not so bad after all.

Before leaving the weir site, Hydro News met a number of the men who are engaged on this project. There

*(Continued on page 16)*



JUST AS A rock is dropped into the water, the camera shutter clicked with the above result.



AT THE RIGHT moment, a signal comes from the transit station (above) and the rock is dropped into the river.



POSITION OF the submerged weir can be detected by the "white caps" on the water, as shown in the above picture.



# LINE TO STEEP ROCK IS OPENED

## NOTABLE WARTIME ACHIEVEMENT

**Will Pump Hundred Billion Gallons Of Water Out Of Lake And Aid Development Of High Grade Iron**

**C**OVERING a distance of 120 miles and reaching into Ontario's Northwest hinterland to speed the development of vast mineral resources, Hydro's new 110 kv. transmission line between Port Arthur and Steep Rock Iron Mines Limited was placed in service on November 28.

Ranking as an outstanding wartime achievement, the construction of this line by The Hydro-Electric Power Commission of Ontario was completed within a period of six months. Traversing typical Northern Ontario bush country, the line will provide power to operate the pumps which will drain an estimated hundred billion gallons of water, at a rate of 300,000 gallons a minute, from Steep Rock lake. In addition, it will supply power to the Ontario-Minnesota Pulp



This is Steep Rock lake where Hydro power will help drain a hundred billion gallons of water uncovering three separate ore bodies for open pit mining operations. The mine workings are shown in the right background.

in importance with the development of the Commission's eastern sources of supply.

This project will materially aid in the development of a particularly high grade iron ore which will be of vital importance to the United Nations' war effort. After the war, it is expected that this ore will find a ready market in the production of high grade steels.

As the water level in Steep Rock lake is lowered the ore body lying in the lower section of the middle bay will be the first to be uncovered. Overbearing material will be removed partly by hydraulic mining methods and partly by dragline and steam shovel. As the ore is uncovered, mining operations by the open pit method will commence.

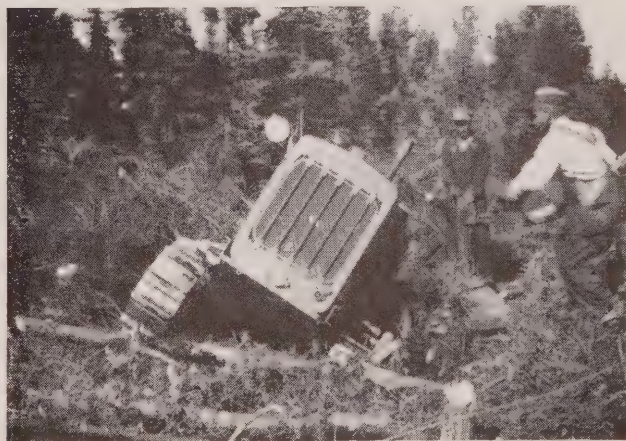
It was pretty tough going at times! Take for example this shot taken during the construction of the 120-mile line between Bare Point and Steep Rock.



An impression of the rugged bush country through which the new Port Arthur-Steep Rock transmission line has been constructed can be formed from this illustration.

and Paper Company, Limited, in lieu of power formerly generated by the company's own plant which had to be shut down before Steep Rock Lake could be drained.

The line with associated terminal switching equipment was constructed at a cost of approximately \$1,500,000 and is of twin wood pole construction, of western cedar, thus alleviating to a great extent the wartime scarcity of steel. Power conductors were obtained from certain line sections in the Niagara system which have decreased







*This is*

# PARIS

FROM HIGH on a hill top, Paris, Ontario, presents this picturesque picture which shows the main street and environs.

**F**LOURISHING in the valley at the junction point of the Nith and Grand rivers, Paris is a town in Brant County, Ontario, about 60 miles southwest of Toronto.

Up until 1836 it was known as "The Forks of the Grand River," but for the sake of convenience and because of a crude rock formation found in this particular locality which is used in making plaster of Paris, the name was changed to Paris.

Hydro had its introduction in this municipality in 1914. Since that time there has been a continual load growth until now it is over 1,900 horsepower which provides service for 1,208 domestic, 192 commercial and 25 industrial users. This load would, no doubt, have been greater but for the fine co-operation of the consumers in conserving energy for essential war needs. The power used in this area is distributed over 20 miles of transmission lines.

Sound financing has been characteristic of this district where Hydro debentures totalling \$92,000 have been fully paid up, the last payment having been made in September of this year.

Since the inauguration of Hydro in Paris there has been a substantial reduction in rates. Prior to 1914 the average domestic rate was 7 cents per kilowatt-hour, and today it is 1.23 cents.

Paris, like so many other municipalities, has geared itself for the demands of war, and many among its 4,500 population are engaged in war work. With the help of Hydro, which is the driving force behind Ontario's war

effort, they are making axles for guns, and various types of clothing for the Armed Forces.

This flourishing centre boasts several diversified industries and has the largest textile manufacturing plant in Canada. Other industries include alabastine works, needle works, screen door and refrigerator factories.

The leading companies are: Penman's Limited; Paris Wincey Mills; Sanderson-Harold Company; W. Cockrane and Company; J. D. Adams, Limited; Medusa Company of Canada; Taylor Lumber; Paris Flour Mills; Walker Press; Gypsum Lime and Alabastine Company; and Consolidated Sand and Gravel Company Limited.

A town of many fine buildings, homes, churches and schools, Paris is also the centre of a rich farming district. In fact it is known as the "Garden Town of Ontario."

Paris also claims the distinction of having been on the receiving end of the first telephone message of the late Dr. Alexander Graham Bell, transmitted from Brantford to Paris over wire strung along fence posts.

Several nationally known people had their first home in this picturesque community, including Paul Wickson, the artist, famous for his paintings of horses; and Arthur Heming, the author.

The Hydro affairs of this enterprising municipality are ably administered by Richard Thomson, chairman; Dr. Fred Barron, George Foulds, Charles C. Wheeler and Mayor John P. McCammon, commissioners; William J. Haggett, clerk; L. R. Anguish, reeve; George E. Boucher, superintendent; and C. A. Veigel, secretary-treasurer.





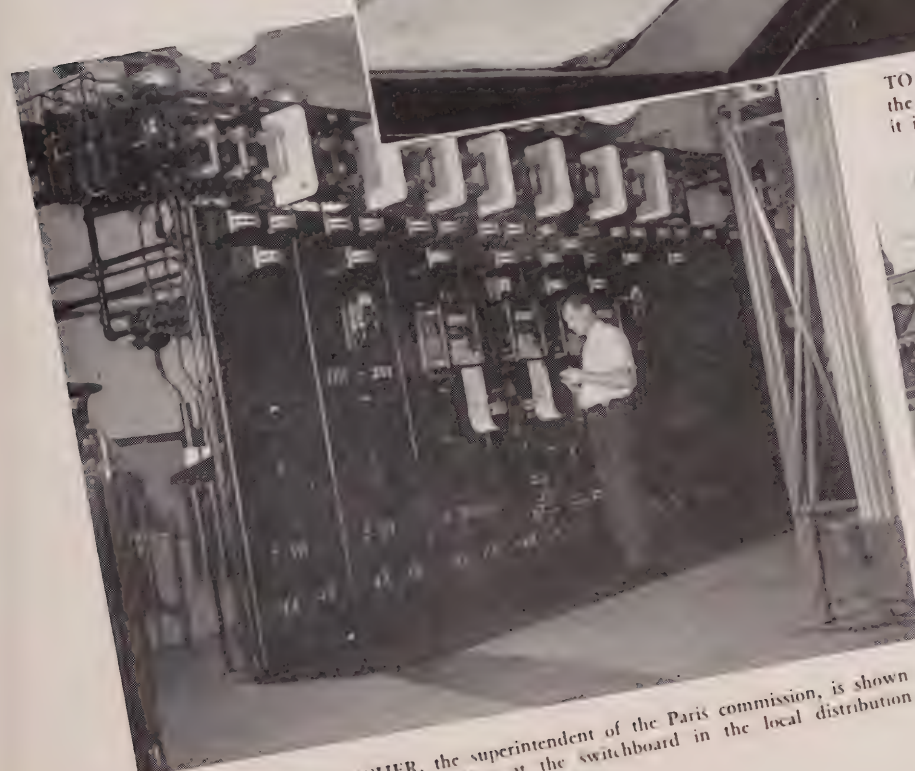
CONCRETE TESTIMONY to years of public service is to be found in the solid but unpretentious furnishings and appointments in the Paris municipal office shown above. Here "town fathers" and members of the municipal staff are shown at work. An exterior view of the building can be seen in the foreground of the picture on the right.



MEMBERS of the Paris commission, shown here, from left to right, are: C. C. Wheeler, commissioner; George Foulds, commissioner; George Boucher, superintendent; Clarence Veigel, secretary-treasurer; Richard Thomson, chairman; Dr. Frank Barron, commissioner; and Mayor John P. McCammon.



TO THE REAR of the municipal office in Paris is the transformer which steps down the power before it is distributed to the local consumers. In front of the transformer is the Hydro service truck.



GEORGE BOUCHER, the superintendent of the Paris commission, is shown here taking a meter reading at the switchboard in the local distribution station.





## SPIRITED DEBATE STARTED BY "FLAT RATE" SPONSORS

**Resolution Strongly Criticized At District No. 8  
Convention Before Being Carried By  
Small Vote—Question Now Being  
Studied Delegates Told**

A RESOLUTION urging the adoption of a "flat rate" for the wholesale delivery of power to Hydro municipalities throughout Ontario touched off a spirited and lengthy discussion at District No. 8 O.M.E.A. convention at the Prince Edward Hotel, Windsor, on November 10.

Presented in an able manner by vice-chairman R. M. Durnford and commissioner J. T. Barnes of the Sarnia commission, the resolution ran the gauntlet of vigorous criticism before it was carried by a small majority with only a small percentage of the delegates in attendance recording a vote.

The Sarnia representatives urged that a "flat rate" be made to apply to all municipalities except those with lower rates "which would remain stabilized pending the application of the flat rate principle to the ultimate inclusion of all."

Charles Austin, chairman of the Chatham Public Utilities Commission, pointed out that the flat rate question was now before the provincial government as a result of a resolution passed by the opposition (now the government) at the last session. This resolution, Mr. Austin explained, had asked that The Hydro-Electric Power Commission of Ontario bring in a report with regard to the possibility of equalizing rates within the province. The speaker said that in view of the fact that the matter was



In this group are, from left to right, Garnet A. Edwards, chairman, Hydro Division, Windsor Utilities Commission; Alfred P. St. Louis, chairman, Riverside Hydro-Electric Commission; Warren P. Bolton, commissioner, Windsor; and Charles Austin, chairman, Chatham Public Utilities Commission.

being considered by the government, he did not consider it the proper time to discuss "flat rate." He also contended that neither he nor the other delegates had the necessary information to deal with such an important matter.

### Power Cost Not a Factor

When questioned on the subject, R. T. Jeffery, chief municipal engineer, H.E.P.C., stated that the Commission was making a report to the government on rates and cost of power and that no statement could be made at the present time.

During the debate, it was claimed that a "flat rate" would bring about decentralization of industry, while other opinions expressed were to the effect that transportation facilities and the suitability of a location for specific manu-



A representative and enthusiastic gathering of delegates attended the District No. 8 O.M.E.A. convention at the Prince Edward Hotel, Windsor. Among those present were the quartet shown above. They are, from left to right, Kenneth A. Christie, K.C., president of the O.M.E.A.; Gordon H. Fuller, chairman of the Windsor Utilities Commission; R. T. Jeffery, chief municipal engineer, H.E.P.C., and mayor A. J. Reaume, Windsor.



facturing operations were primary considerations of industry.

It was pointed out that power costs for manufacturing a hundred-dollar article ranged from a few cents to 3 dollars, and that, therefore, the cost of power did not materially affect the location of industry.

A resolution advocating relaxation of restrictions now imposed upon the lighting of store windows and business premises was presented by the Chatham Public Utilities Commission and endorsed by the convention. This reso-



Members of this foursome at District No. 8 convention were exchanging good-humoured reminiscences when the photographer spotted them. Included in the group are Mayor T. Gordon of Blenheim; Dick Harrison of Windsor, and T. Clark Keith, secretary and general manager of the Windsor Utilities Commission.

lution suggested that a minimum of five watts per foot of window length be permitted.

Falling in line with action taken at other district O.M.E.A. conventions, District No. 8 approved a motion which urged that Hydro municipalities be relieved of the payment of unemployment insurance.

The convention agreed that the H.E.P.C. should be asked to consider the desirability of establishing an auxiliary



A. G. Jennings, chairman of East York Township Hydro-Electric Commission, (centre) was proving that he is an able raconteur when the above photograph was taken. On his right is H. R. Henderson, commissioner, Woodstock Public Utilities Commission; while F. H. May, chairman of the St. Marys Public Utilities Commission, is on his left.

generating plant in the City of Windsor to supply energy to the southwesterly section of the province.

There was also general approval of the idea that the O.M.E.A. should bring together representatives of the larger communities which have problems in common.

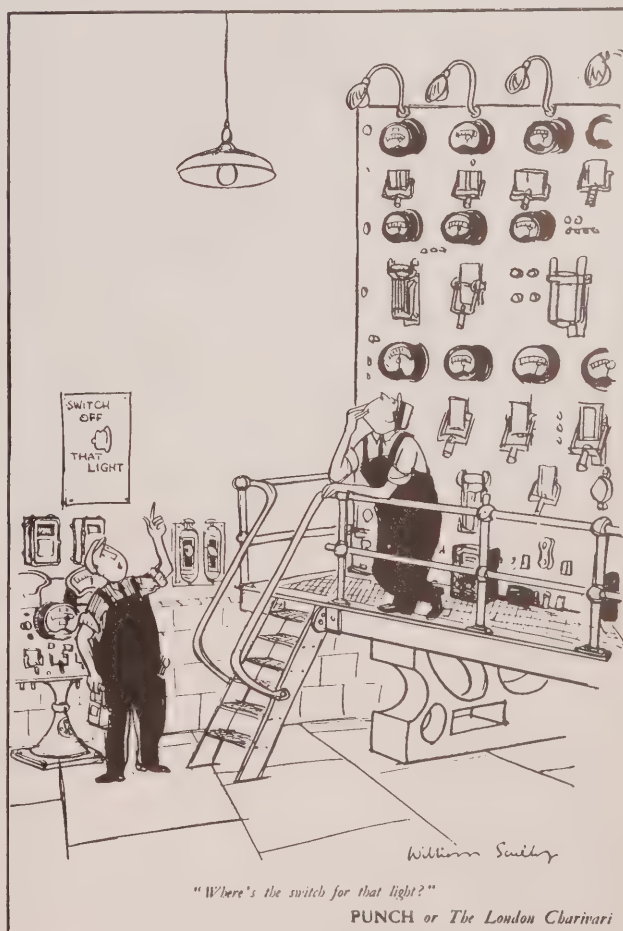
Further discussion centred upon the question of providing pensions for women employees at an earlier age than now stipulated in the present pension plan. As a result, the pension plan committee was asked to investigate and report upon the cost involved.

R. S. Rhodes, merchandising manager of the Hydro Division of the Windsor Utilities Commission, submitted a report of the question of switch standardization and indicated that satisfactory progress is being made in eliminating a problem involved in keeping electric ranges in service.

Gordon H. Fuller, chairman of the Windsor Utilities Commission, presided at the dinner, while Garnet A. Edwards, chairman of the Hydro Division, was chairman during the afternoon session. Mayor Arthur J. Reaume of Windsor extended a civic welcome to the delegates and Warren P. Bolton, chairman of the Windsor extra-urban services committee, in introducing the labour representatives present, stated that labour and management had been drawing closer together in Windsor and predicted that this trend would continue.

Other speakers included Kenneth A. Christie, K.C., president of the O.M.E.A.

Officers elected to conduct the affairs of District No. 8 for the ensuing year are as follows: president, Garnet A. Edwards, Windsor; vice-president, John T. Barnes, Sarnia; executive, A. P. St. Louis, Riverside; Charles Austin, Chatham, and W. T. Bolton, Windsor.





## HEAVY POWER DEMANDS TAX SUPPLY TO LIMIT

**Next Two Months Critical, R. T. Jeffery Tells  
District No. 8 Delegates — Sees Big,  
Temporary Let-Down Immediately  
After War**

**N**EW war loads, approved by the Dominion Power Controller, are taxing available power resources to the limit despite the recent addition of 65,000 horsepower from the DeCew Falls generating plant.

This was one of a number of important facts emphasized by R. T. Jeffery, chief municipal engineer of The Hydro-Electric Power Commission of Ontario, when addressing the delegates in attendance at District No. 8, O.M.E.A. convention, at Windsor on November 10.

Mr. Jeffery explained that the Commission was in just about the same kind of position as last year when mandatory restrictions had been introduced along with an appeal for voluntary conservation in the use of electricity.

The speaker made it clear that the months of December and January—when the darkest days of winter occur—would be the most critical period. While the Commission had been successful in meeting the demands of vital war industries to date, Mr. Jeffery indicated that it would be necessary to cut certain loads at peak hours on the peak days of December and January.

Immediately following the war there would be a big, temporary let-down in the demand for power and large blocks of unused power would be left on the Commission's hands until such a time as industry reverted to peace-time conditions, he stated. Within two or three years after the war, however, Mr. Jeffery continued, the Commission would have to consider new sources of power supply as a considerable time had to be allowed for the construction of new generating plants. That question, of course, he stated, would depend upon how quickly industry made the transition from a war to a peace-time basis.

Mr. Jeffery, who was the principal speaker at the dinner in the evening, intimated that possible relaxation of power restrictions had been considered during the summer months when the load was not so heavy, but the Power Controller had decided that it would not be advisable to take any action in the matter.

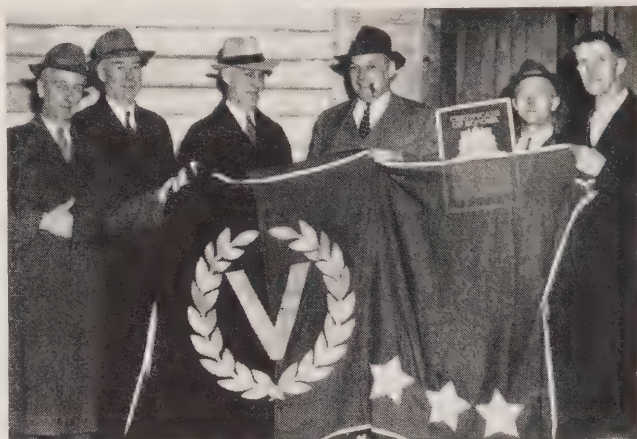
"Right now," he declared, "the demand for power is as great if not greater than it was last winter when the restrictions were first imposed. Hydro can provide 2,043,000 horsepower in Southern Ontario and, we expect, that the load will be within 15,000 horsepower of that figure by December."

Continuing, Mr. Jeffery said, "Since the first of the year, loads totalling 40,000 horsepower, practically all for war industry and approved by the Power Controller, have been added. This means that the total war load is now over 800,000 horsepower."

In paying tribute to Hydro communities in District No. 8, the speaker remarked, "Municipalities in this district are sitting on the top of the world financially." He pointed out that practically all these municipalities had paid off their debenture debt against their distribution systems

or they had enough cash on hand to offset that debt. Mr. Jeffery also stated that 234 of the 292 Hydro municipalities throughout Ontario were in that fine position.

Proceeding, Hydro's chief municipal engineer referred to the introduction of the Rural Power District scheme in 1920 to supply power to the farmers of the province. These rural loads, carried by lines supplying power to urban municipalities, he stated, had been a big factor in reducing the cost of power to these small urban centres.



Construction and operating staffs of the H.E.P.C. in the Burlington area are now the proud possessors of a three-star victory loan flag. The flag was presented to representatives of the Hydro employees after they had exceeded their quota of \$10,000 by \$1,900 in the Fifth Victory Loan Drive. Shown in the picture are: Frank C. Virture, victory loan payroll chairman; George T. Brown, H.E.P.C. district operating supervisor; Stanley Craze, victory loan general chairman; N. T. Scott, H.E.P.C. construction superintendent; Mervin S. Herbert, H.E.P.C. timekeeper; and John Crawford, H.E.P.C. field office manager.

### TAKEN FOR A RIDE

*(Continued from page 10)*

were, in addition to Mr. Beam, William Hogg, assistant engineer; Isaac Hicks, construction foreman; Bert Giles, who operates the electric cableway (and to whom we are indebted for a smooth ride); H. R. Gemmill, sub-foreman, and Edward Gallagher, who operates the transit.

The weir was constructed under the supervision of an international committee of which Otto Holden, chief hydraulic engineer of The Hydro-Electric Power Commission of Ontario, is a member. C. G. Cline of the Dominion Water and Power Bureau is the other Canadian member and the United States is represented by Colonel John R. Silkman, of the War Department at Buffalo, and Roger B. McWhorter, of the Federal Power Board, Washington.

Observation of water levels indicate that the weir is fulfilling its various functions satisfactorily.

**JOSEPH W. OAKES**, chairman of the Guelph Board of Light and Heat Commissioners, passed away recently in his eightieth year after a very brief illness.



# Around the Hydro Circuit

## PORT ARTHUR CHAIRMAN

Chairman **RICHARD G. WALSH**, who has been on the Port Arthur Public Utilities Commission for six years, was born in Port Arthur in 1892. He also served on the city council from 1926 to 1929.



He received his early education in Port Arthur and later attended Upper Canada College in Toronto.

Being sports-minded, Mr. Walsh, in his leisure hours from the coal business, was for many years president of the Port Arthur Bear Cats, and vice-president of two Allan Cup teams. At the present time he is president of the Port Arthur West End Juniors. He

was also president of the Thunder Bay Rowing Club for many years.

## MANAGER AT PORT ARTHUR

**RALPH BORTHWICK CHANDLER**, who has been manager of the Port Arthur Public Utilities Commission for the past eight years, was born in Stratford, Ontario, in 1889.

Receiving his early education in Stratford, he later graduated from the University of Toronto in 1914 with the degree of Bachelor of Applied Science.



Prior to his acceptance of the managership of the Port Arthur Commission, Mr. Chandler was for twenty years consulting engineer with the firm of C. D. Howe and Company (present minister of munitions).

He has had considerable experience with municipal affairs, having been for some years a member of the commission. He was president of the Association of Municipal Electrical Utilities; chairman of the Parks Board and was on the executive committee of the Chamber of Commerce. For many years he was president of the Red Cross and has acted as chairman of the Campaign Committee for the last fourteen years and is also an active member of the executive for the Canadian Red Cross.

Mr. Chandler's numerous and varied activities include the chairmanship of the lakehead branch of the Engineering Institute of Canada; and he is a member of the Waterworks Association, Canadian section, and the American Institute of Electrical Engineers.

While at university he was a member of the Intercollegiate track team which held the championship for four years and of the Intercollegiate relay team which held the Intercollegiate Dominion championship for many years. He was also a member of the Glee Club.

Gardening is one of his principal hobbies, although he admitted that he is a member of the Port Arthur Golf and Country Club.

## MEET MARTIN J. McDONALD

**MARTIN J. McDONALD**, commissioner, Port Arthur Public Utilities Commission, who was born in Appleton, Wisconsin, is a well-known figure in the twin cities. Although a newcomer to the commission, he is quite familiar with municipal affairs, having been an alderman from 1932 to 1938.

Mr. McDonald is president of both Port Arthur Senior Chamber of Commerce and North Western Ontario Retail Lumbermen's Association, and is past president of Port Arthur-Fort William Kiwanis Club. He also has the distinction of being "Junior Who-Who" of Concatenated International Order of Who-Who, which is a fraternal association of lumbermen. Incidentally the only branch of this society now operating in this part of Canada is located in Port Arthur.

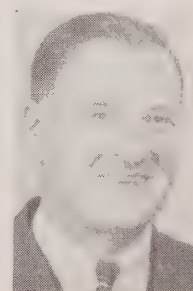


His principal hobby is deep water fishing, and he holds the championship for the largest lake trout caught in Lake Superior with a hook and line. According to the story, the catch weighed 41½ pounds.

## COMMISSIONER SAMUEL ASHTON

A native of Darwin, Lancashire, England, **SAMUEL ASHTON**, commissioner, Port Arthur Public Utilities Commission, has served for the past seven years on the commission, having been chairman for three years.

Mr. Ashton has been foreman of the Thunder Bay Paper Company for the past seventeen years.



## PORT ARTHUR MAYOR

Mayor **CHARLES W. COX**, who is also a member of the Port Arthur Public Utilities Commission, was born and educated in London, Ontario.

Taking a keen interest in municipal affairs, Mr. Cox was alderman of the city council in 1932; mayor from 1934 to 1943; and a minister without portfolio in the Provincial Cabinet for ten years.

He was president of the Port Arthur Chamber of Commerce in 1932, and for the past ten years has been president of the Port Arthur Arena. He is in the lumber business and was quite a sprinter in his younger days.







# *At call* **PORT ARTHUR**

One of the prominent landmarks of downtown Port Arthur is the imposing Public Utilities Building which is shown in the illustration on the left.

**R**ANKING with Rio de Janeiro and Naples for the scenic beauty of its coast-line, steeped in Indian tradition, and closely linked with the economic development of the western provinces, Port Arthur, with its twin city Fort William, are well named the "Gateway of the West."

Laying claim to the distinction of having operated the first municipally-owned electric street railway on the North American continent, Port Arthur has been a Hydro consumer since 1910 and last year paid off the last outstanding debentures on both its Hydro system and the street railway department.

Located at the head of the lakes the city draws its power from Hydro plants on the Nipigon river, through the Bare Point transformer station. Two local transformer stations distribute the power over secondary lines to the 5,731 domestic, 877 commercial and 110 industrial consumers.

Port Arthur was named by Lord Wolseley in 1870. Leading the troops sent to quell the Riel Rebellion, he landed on the shores of Thunder Bay at the "Station" and named it "Prince Arthur's Landing" in honour of Prince Arthur, Duke of Connaught, who was with the expedition. Establishing a camp here, he followed the Dawson Road to the west. This road, begun in 1869 by Simon J. Dawson, C.E., was used by immigrants to the

west until the construction of the Canadian Pacific Railway.

First incorporated as a town in 1884, Port Arthur grew and prospered and, in 1906, received its city charter. Its position at the head of the Great Lakes and its splendid natural harbour aided its development into a major port for freight shipments by water consigned to the Canadian West. The bulk of Western Canada's cereal crop moves eastward through its giant terminal grain elevators to Montreal and the Atlantic seaboard.

## **Largest Grain Elevator**

Since the first grain elevator to handle western wheat was erected at Port Arthur in 1883 by the Canadian Pacific Railway, Hydro power in abundant supply has aided in the fast and efficient handling of this "Western Gold." In all there are 14 terminal grain elevators. One, of 14,000,000 bushels capacity, is said to be the largest grain storage elevator in the world and is equipped with machinery to unload 280 freight cars per 10-hour day, and to ship 1,000,000 bushels to boats in 10 hours.

It is also claimed that the first electric lights to be turned on west of the Great Lakes were located in Port Arthur. It was in 1885 that three 16 candle power lamps were installed in Caleb Sheara's store and supplied with direct current from a generator set up in Woodside Brothers Machine Shop. Iron hay wire formed part of the circuit



which was hung on trees. The lights were used on Saturday nights only!

Two years later the business section of the municipality was being lighted from a generator located in the Commee Planing mill on the water front south of Manitou Street. Within a few years the growing demand for power prompted the erection of a steam generating plant to supply power for the electric street railway and commercial users. As the demand increased and far-sighted businessmen of the time saw the advantages of "White Coal," the Current river development was commenced and, in 1902, a generating station developing 1,200 horsepower was placed in operation.

In 1906 the present Current river dam was constructed and the capacity of the generating station increased to 2,000 horsepower by the addition of a second wood stove pipe and turbine.

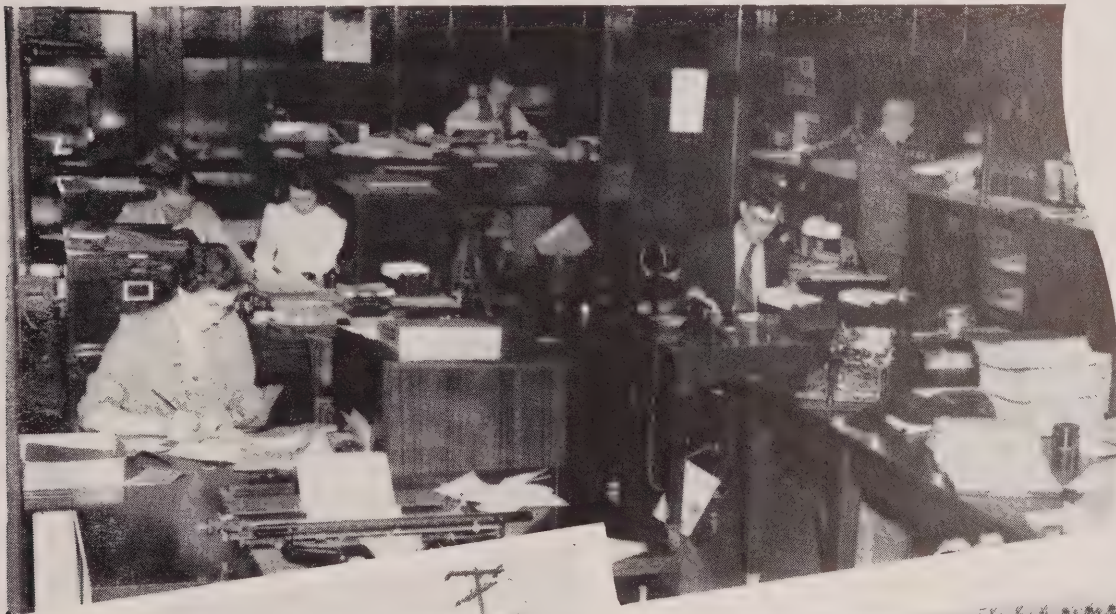
The Port Arthur Public Utilities Commission came into being in 1915, and was charged with the management of the Hydro, Water Works, Telephone and the Street Railway. Its first chairman was W. P. Cooke, and the first commissioners were: I. L. Mathews, A. E. Wideman, G. H. Rapsey, and mayor J. P. Mooney.

When this commission took over control of Hydro in Port Arthur the load was 2,345 horsepower. This load has shown a steady growth until to-day the load is approximately 46,152 horsepower. Its transmission network has grown until to-day the area is served by 40 miles of high tension transmission lines and 90 miles of low tension line. Power for the city is generated at two plants on the Nipigon river, one at Cameron Falls, which came into operation in 1920, and the second at Alexander Landing which was put into operation in 1930. Transmission lines of the H.E.P.C. bring the power to Bare Point transmission station and from there it is distributed to the two lakehead cities. The Current river generating station has now been relegated to a secondary position supplying power only during peak load periods.

Port Arthur is an important paper making centre with three mills producing approximately 370 tons per day. The Thunder Bay Paper Company operates two mills and the Provincial Paper Company one mill in the area. A number of companies engaged in cutting pulpwood and sawing logs and railroad ties, have their headquarters in the city and employ approximately 2,500 men.

The steamer "Noronic," largest Canadian passenger

*(Continued on next page)*



Members of the office staff were hard at work when the photographer flashed this picture (left) which shows a section of the Port Arthur Public Utilities' office. View of the Cameron Street and High Street substations are featured in the lower left and right illustrations respectively.





# A Modern Christmas Carol

*I*t was a perfect Christmas Day and large flakes of soft snow were falling obligingly, as if they had been ordered specially for the occasion. We had been having wonderful fun all day, singing, dancing, laughing, opening gifts and generally making merry in the time-honoured spirit of Christmas. It seemed as if the carols at church that morning had never been sung more beautifully, and that happiness and goodwill had completely supplanted sorrow and selfishness. It made you feel good just to be alive.

*And that dining room! It was a joy to behold. Festive decorations were strung lavishly along the walls and across the ceiling and, in the centre of the room, a myriad of tiny lights twinkled joyously as crisp holly leaves swung jauntily to and fro beneath the chandelier. The massive table was so heavily laden with generous servings of delicious food and drink and innumerable dishes of tantalizing sauces, and so freely adorned with colourful fruits and candies and gleaming cutlery that it seemed as if the mere addition of a single grape would have made it sag in the middle.*

*Waves of hearty laughter rolled across the room as we joined in merriment and lively banter at the table, everyone talking excitedly to everyone else and all at the same time. Yes, it was truly Christmas Day. No doubt about it.*

*As we enthusiastically disposed of one tempting course after another (ah that turkey!), there was unrestrained agreement on all sides that this would surely rank as one of the finest dinners of all time.*

*It seemed to me that if all the food in the world had been assembled in a mountainous array in front of me that day, I could have done justice to it, every last bit. And as I contemplated such a happy offering, my head began to reel, things grew hazy, and the incongruity of it all seemed to dance wildly in my brain. Everything became mixed up. I could see and hear innumerable things . . . Christmas trees and bright lights . . . gigantic plates of turkey and steaming dishes of every description . . . fruits and candies in prodigious quantities all around me . . . candlesticks, tinsel, holly leaves . . . fields of downy snow . . . long lines of people passing through the house, patting one another on the back, handing out cigars, shouting "Merry Christmas!" . . . men laughing and closing their eyes jokingly as they held up vivid neckties for all to see . . . children running upstairs and downstairs hour after hour, sliding, laughing, screaming with delight . . . the merry jingle of sleigh bells . . . those beautiful carols . . . and everybody I knew was there . . . Mom and Dad, Bill, Helen and . . .*

*Something tugged roughly at my shoulder. I muttered feebly and half-opened my eyes. A gruff voice shot down at me.*

*"Hey, soldier, wake up! We just got orders to advance!"*

## A CALL AT PORT ARTHUR

(Continued from page 19)

boat on the Great Lakes, and the freighter "Grant Morden", a bulk grain, ore, and coal carrier, for many years the largest ship of its type, were built in the Port Arthur shipyards which are now producing naval escort vessels.

Also located here is the Northern Wood Preservers Limited, a plant for creosoting timber and railroad ties on a large scale, which is now engaged in the manufacture of aircraft hangar frames, and poles for the signal corps. There are also 24 smaller miscellaneous industries, for the most part engaged in war work operating in the city.

## Home of Ojibway Indians

The surrounding district is the ancestral home of the Ojibway Indian tribe, numerically the greatest in Canada, and to-day numbering over 20,000 strong.

Across an excellent harbour, protected by more than five miles of breakwater can be seen the "Sleeping Giant" about which the Indian legend still exists.

According to Indian folk-lore Nanni-bijou lived with his spouse on the shores of a distant lake. Evil days came upon the world; the mighty hunter could find no game in the woods and the fish did not enter his nets. His squaw, tormented by the pangs of hunger, chided and scorned him until, enraged, he smote her with his war club and she dropped dead at his feet. Horror-stricken he fled his wigwam. Finally, half crazed with terror and remorse, he staggered and fell backward into the waters of the lake. The Great Spirit took pity upon him and granted him rest by turning him into everlasting stone.

The Indians have always paid the utmost reverence to the sleeping giant and when rounding the cape in their birch-bark canoes they paid tribute by casting an offering of salt, sugar, or tobacco into the waters.

The destiny of Hydro in Port Arthur is now in the capable hands of R. G. Walsh, chairman, and commissioners Sam Ashton, Dr. M. P. Benger, M. J. McDonald, mayor C. W. Cox, and R. B. Chandler, manager.

## HANOVER CHAIRMAN PASSES

JOHN KALTE, aged 72 years, chairman of the Hanover Public Utilities Commission, and honorary vice-president of the Ontario Municipal Electric Association, passed away at his home recently.



A native of Holland, Mr. Kalte came to this country at an early age, and for some years was manager of the Hanover Iron Works. About nine years ago he started his own business.

Mr. Kalte had had over twenty years' experience with Hydro municipal affairs, having served on the Hanover Commission since its inception in 1919. He had also been connected with the O.M.E.A. since 1932, being at that time on the executive of the Georgian Bay Municipal Electric Association, and in 1940 and '41 was elected president.



## MANY HYDRO GARDENERS REAP ADDITIONAL HARVEST AT ANNUAL DINNER OF HORTICULTURAL SECTION



**M**ANY Hydro Victory Gardeners and Horticulturalists reaped an additional harvest recently when they received awards in recognition of their success in competitive events during the past year.

Presentation of these prizes were made at the annual dinner of the horticultural section of the Ontario Hydro-Electric Club in Central Y.M.C.A. with W. H. Carr, the president, in the chair.

Shown above are two camera impressions of the event at which Mr. Carr declared the Victory Garden Campaign had represented an important contribution to the war effort and a service to Hydro employees. He spoke of "the enormous amount of work done by the committee," and expressed appreciation for the generous assistance given by the Commission and the Ontario Department of Agriculture. In this connection, Mr. Carr made special reference to the untiring help given by George Rush of that department. He also commented upon the exhibits displayed at the three flower shows and the Victory Garden harvest exhibition.

In a report, which contained many interesting and enlightening facts, H. R. Hill, the secretary, stated that the horticultural section had a membership of 816 during the past year. Of that number, 745 were Victory Gardeners, the latter group comprising 449 members in Toronto and 296 outside the city.

Tessa MacPherson, retiring treasurer, was the recipient of a bouquet of roses in recognition of the fine service she has rendered over a period of three years in that position, the presentation having been made by Dorothy Powell. In her final report Miss MacPherson announced a balance on hand of over \$130.

Adam Smith, chairman of the Victory Garden Cam-

paign, declared that the club had broken new ground in launching the campaign and had established "a model which will be an example and an inspiration to other organizations in the future."

Officers for the ensuing year are: president, A. B. Hayman; vice-president, J. J. Traill; secretary, H. R. Hill; treasurer, Elizabeth M. Grader; directors, Edithemma Muir, Etta Johnson, E. V. Butt, J. F. MacLaren, A. H. Sharpe and A. W. Smith.

### RURAL HYDRO RATES

*(Continued from page 7)*

cost of \$40,000,000.

Up to the present time the rate structure for rural service has consisted of a service charge, which was intended to cover the fixed charges on the capital investment in the district, and a meter or consumption charge to cover the cost of electric power used and the operating costs of the distribution system in the district. The rates have been adjusted from time to time to meet changing conditions and the service charge, which was originally \$5.50 per month for a standard farm, is at present \$1.00 per month. Under amendments to The Power Commission Act made some years ago, the Provincial Government pays 50 per cent of the cost of installing lines and equipment to supply rural service.

Although scientifically conceived, the existing rate structure has grown more complex with the expansion of rural Hydro into 120 separate districts with varying rates. The new "streamlined" system of rural rates will simplify considerably the Commission's plans for rural expansion in the post-war period.





**S**HARE and play square with food!

One of the first things a soldier must learn is that he is part of a team. A battle cannot be won without teamwork. The same thing is true of the battles on the home front, particularly the battle of food, and it's going to take the united efforts of all Canadians, working together as a team, to win this battle.

Food is fighting for freedom everywhere: in the army field kitchens where meals are cooked within sound of battle; on ships cooking goes on as guns roar defiance at enemy dive bombers. Food is fighting in the liberated countries where there is white bread on the table for the first time in years, and food fights at home. Now is a good time to take stock of what food is doing in the war—a good time to think about our individual contribution on the home front. Our farms and Victory Gardens this year produced a good harvest, but the needs of war, and of the peace which will follow, will impose ever-increasing demands upon our national larder.

So let's be realistic. The old days—the days of beef steak unlimited—are gone. And perhaps they won't return for a long, long time. Certainly, it's going to take teamwork to bring them back.

Teamwork on the home front means four things. It means producing food, conserving food, sharing food and playing square with food. It also means doing all these things whole-heartedly all the time. Battles are not won by part-time soldiers.

#### Responsibility of Women

This past year women played a bigger part than ever before in food production. They took the place of men on farms; they planted and cared for their own Victory Gardens. Next year, the needs of war will impose still more exacting demands upon Canada's food resources. There will be fewer men available, so that it will be up to the women to assume a greater responsibility in the actual production of food.

Canada, in common with many other countries, has acquired a number of bad food habits, and it is up to the homemakers to solve these problems. Many people, for instance, are guilty of wasting food. In this case, the homemaker can effect an important saving by careful marketing and meal planning; by cooking enough but not too much; by using left-overs, and by handling fresh foods carefully in the store so that they will not be spoiled for the next customer. Homemakers can conserve also by planning their meals in such a way that they use foods which are plentiful, appetizing and nourishing.

#### Playing Square

The fact that some foods are difficult to obtain makes

it necessary to share the available supplies—not only among ourselves but with the armed forces, the people of Great Britain, and other countries. If the homemakers of Canada team up and buy only what they need, they will be taking a big step towards licking the food problem.

Hand in hand with sharing the food is the need for playing square with food, and that means living up to the price and rationing regulations, cheerfully and willingly.

A few inconveniences or changes in our meals are not a great sacrifice to make in helping win the war.

#### Yuletide Fare

Food has always played an important part in Christmas and New Year festivities. If, on gala occasions, our Anglo-Saxon forefathers had asked the familiar question, "What's cooking," they would probably have mentioned such things as stuffed pigs, peacocks, geese, pheasants, mince pie and plum pudding. Turkey, however, was not listed on the bill of fare until the discovery of the New World, we are informed.

Punch was the customary wassail bowl which takes its name from the Saxon words "Waes Hael" meaning "Be in good health." It used to be the accepted practice to put baked apples in the punch to improve the flavour.

When mince pie originated in 1596, it was made from mutton but the Puritans condemned it as an ungodly dish and the Quakers would have none of it. This attitude is attributed to the fact that exactly three hundred years ago our Anglo-Saxon forefathers were ordered to observe Christmas Day as a solemn fast.

Originally, it was believed that each kind of evergreen would confer special blessings upon those who passed under the boughs. Thus, the custom of hanging evergreens in the home during Yuletide had a purpose beyond that of decoration. To pass under holly insured good fortune throughout the year; bayleaves symbolized victory, while the laurel was supposed to impart a spirit of beauty and peace.

Mistletoe was at all times a ceremonial plant which was held in veneration by the ancient Celts and Teutons. For that matter it still is an interesting ceremonial plant!

## TRAILL MAKING ANALYSIS OF VICTORY GARDEN DATA

"**V**ERY satisfactory."

These two words sum up the results of Hydro's Victory Garden Campaign during the past year, according to J. J. Traill, the committee's statistician.

Mr. Traill is now engaged in making an analysis of the data recorded in the garden folders and questionnaires which were completed and returned by a large number of victory gardeners whose co-operation is appreciated by the committee.

Many of the suggestions submitted, it is announced, will be invaluable in formulating plans for next year's Victory Garden Campaign.



## OCTOBER LOAD SUMMARY

**A** TOTAL primary load of 2,242,997 horsepower was supplied by The Hydro-Electric Power Commission of Ontario during October, 1943, an increase of 3.5 per cent over the corresponding month of 1942.

The monthly load summary, based on the maximum 20-minute peak horsepower load for the period, covers all four Hydro systems and the Northern Ontario Properties.

Combined primary and secondary loads showed an increase of approximately 3 per cent over the October, 1942, figure.

### PRIMARY AND SECONDARY LOADS

	Maximum 20-Min. Peak H.P. Oct., 1943	Oct., 1942	Per Cent Increase
Niagara System .....	1,738,606	1,676,273	3.7
Georgian Bay System .....	48,189	45,276	6.4
Eastern Ontario System .....	203,944	176,895	15.3
Thunder Bay System .....	124,638	106,716	16.8
Northern Ontario Properties ..	215,421	260,636	-17.3
Total of All Systems .....	2,330,798	2,265,796	2.9

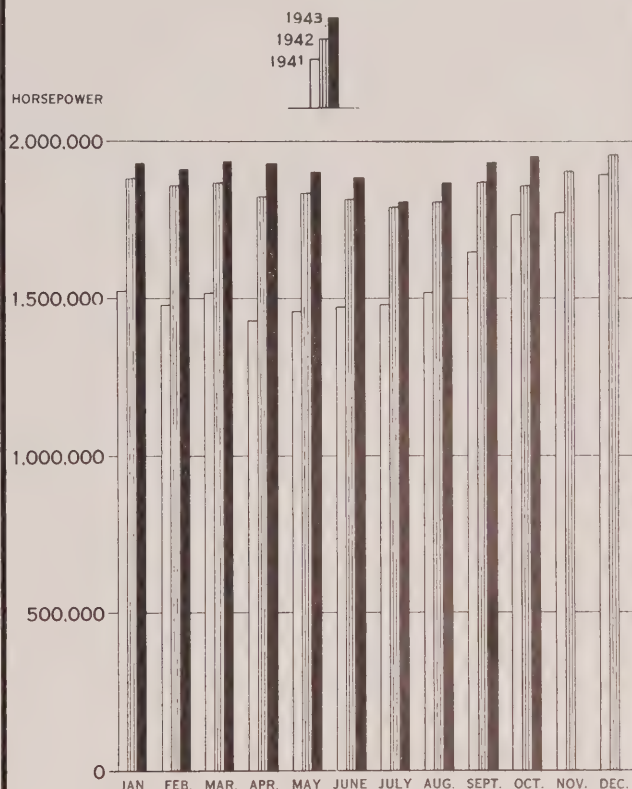
### L. L. KNOX, GODERICH, PASSES

Loftus L. Knox, formerly town clerk and treasurer of Goderich Public Utilities Commission, died recently in his 60th year following a lengthy illness. Mr. Knox, who was appointed to that position in 1909, retired over a year ago because of ill health.

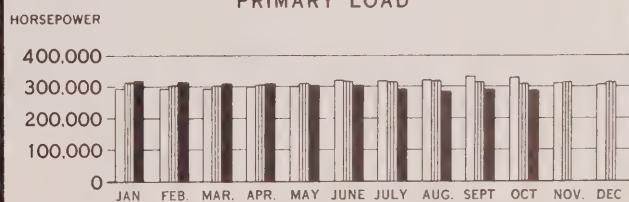


When Santa Claus and his retinue of Fairyland folk came to Toronto they passed the head office administration building of the H.E.P.C. on University Avenue. The two photographic impressions of the parade (above) were recorded by William Harland of the Commission staff.

### SOUTHERN ONTARIO SYSTEMS NIAGARA — GEORGIAN BAY — EASTERN ONTARIO PRIMARY LOAD



### NORTHERN ONTARIO PROPERTIES AND THUNDER BAY SYSTEM PRIMARY LOAD



### PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	OCT., 1943	OCT., 1942	
NIAGARA SYSTEM .....	1,702,145	1,634,316	+ 4.2
GEORGIAN BAY SYSTEM .....	48,189	45,276	+ 6.4
EASTERN ONTARIO SYSTEM .....	203,944	176,895	+ 15.3
THUNDER BAY SYSTEM .....	104,129	101,046	+ 3.1
NORTHERN ONTARIO PROPERTIES ..	184,590	209,028	- 11.7
TOTAL .....	2,242,997	2,166,561	+ 3.5



# MUNICIPAL LOADS, SEPTEMBER, 1943

## NIAGARA SYSTEM

(25-Cycle)

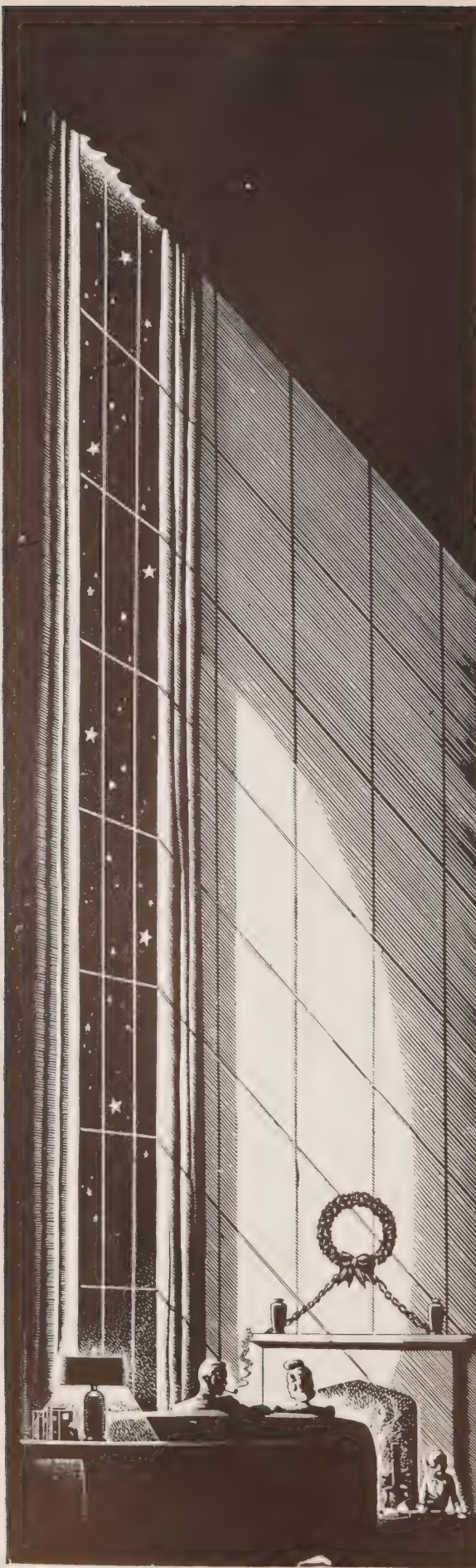
	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Acton	1,666	1,903	Erie Beach	28	21	Palmerston	548	1,400
Agincourt	225	P.V.	Essex	657	1,886	Paris	1,709	4,604
Ailsa Craig	151	487	Etobicoke Twp.	7,560	V.A.	Parkhill	203	1,029
Alvinston	102	649	Exeter	724	1,654	Petrolia	921	2,768
Amherstburg	947	2,704	Fergus	1,184	2,759	Plattsville	131	P.V.
Ancaster Twp.	392	V.A.	Fonthill	208	860	Point Edward	1,569	1,199
Arkona	59	403	Forest	581	1,562	Port Colborne	2,135	6,928
Aurora	1,476	2,821	Forest Hill	6,548	12,172	Port Credit	876	1,934
Aylmer	811	1,985	Galt	10,756	15,126	Port Dalhousie	1,167	1,599
Ayr	212	760	Georgetown	1,818	2,452	Port Dover	495	1,790
Baden	496	P.V.	Glencoe	188	763	Port Rowan	91	700
Beachville	708	P.V.	Goderich	1,670	4,674	Port Stanley	969	824
Beamsville	422	1,227	Granton	74	P.V.	Preston	3,996	6,656
Belle River	199	836	Grimsby	892	1,988	Princeton	139	P.V.
Blenheim	504	1,873	Guelph	10,858	23,074	Queenston	142	P.V.
Blyth	135	662	Hagersville	1,185	1,524	Richmond Hill	509	1,295
Bolton	212	629	Harriston	471	1,292	Ridgetown	532	1,986
Bothwell	121	683	Harrow	631	1,092	Riverside	1,078	5,235
Brampton	2,706	6,157	Hensall	179	686	Rockwood	134	P.V.
Brantford	21,237	31,622	Hespeler	2,537	2,938	Rodney	135	758
Brantford Twp.	1,084	V.A.	Highgate	102	322	St. Clair Beach	101	138
Bridgeport	152	P.V.	Humberstone	477	2,831	St. George	151	P.V.
Brigden	93	P.V.	Ingersoll	3,254	5,757	St. Jacobs	349	P.V.
Brussels	139	784	Jarvis	184	513	St. Marys	1,626	4,009
Burford	284	P.V.	Kingsville	577	2,453	St. Thomas	7,537	17,045
Burgessville	56	P.V.	Kitchener	26,828	35,456	Sarnia	10,815	18,599
Burlington	1,610	3,925	Lambeth	122	P.V.	Scarborough Twp.	4,570	V.A.
Burlington Beach	434	1,474	LaSalle	274	907	Seaforth	698	1,782
Caledonia	347	1,430	Leamington	2,124	6,048	Simcoe	2,379	6,340
Campbellville	36	P.V.	Listowel	1,465	2,984	Smithville	176	P.V.
Cayuga	110	700	London	38,234	77,105	Springfield	65	382
Chatham	6,137	17,184	London Twp.	522	V.A.	Stamford Twp.	2,833	8,275
Chippawa	323	1,228	Long Branch	1,195	4,258	Stoney Creek	221	933
Clifford	111	491	Lucan	199	643	Stouffville	343	1,198
Clinton	671	1,879	Lynden	122	P.V.	Stratford	7,732	17,163
Comber	155	P.V.	Markham	423	1,175	Strathroy	1,603	2,834
Cottam	73	P.V.	Merlin	77	P.V.	Streetsville	238	701
Courtright	46	355	Merritton	11,607	2,916	Sutton	341	949
Dashwood	118	P.V.	Milton	1,484	1,915	Swansea	2,987	6,907
Delaware	75	P.V.	Milverton	361	994	Tavistock	715	1,080
Delhi	370	2,430	Mimico	2,454	7,987	Tecumseh	571	2,331
Dorchester	99	P.V.	Mitchell	731	1,670	Thamesford	241	P.V.
Drayton	136	528	Moorefield	41	P.V.	Thamesville	214	816
Dresden	407	1,525	Mount Brydges	93	P.V.	Thedford	106	598
Drumbo	111	P.V.	Newbury	32	288	Thorndale	93	P.V.
Dublin	67	P.V.	New Hamburg	609	1,441	Thorold	2,495	5,284
Dundas	2,819	5,245	Newmarket	1,857	3,800	Tilbury	1,414	1,923
Dunnville	1,058	3,916	New Toronto	11,945	9,469	Tillsonburg	1,140	4,602
Dutton	251	830	Niagara Falls	10,294	20,371	Toronto	333,619	657,612
East York Twp.	7,481	41,578	Niagara-on-the-Lake	965	1,764	Toronto Twp.	3,256	V.A.
Elmira	1,299	2,069	North York Twp.	10,201	V.A.	Wallaceburg	3,857	4,802
Elora	474	1,185	Norwich	435	1,301	Wardsville	36	221
Embro	147	420	Oil Springs	165	541	Waterdown	254	867
Erieau	139	281	Otterville	132	P.V.	Waterford	393	1,294
						Waterloo	5,324	8,968



## MUNICIPAL LOADS, SEPTEMBER, 1943

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Watford	375	1,023	Neustadt	42	431	Lakefield	381	1,301
Welland	10,281	14,899	Orangeville	752	2,558	Lanark	77	686
Wellesley	137	P.V.	Owen Sound	5,752	13,559	Lancaster	43	570
West Lorne	230	768	Paisley	109	730	Lindsay	3,723	8,345
Weston	4,742	6,165	Penetanguishene	999	4,177	Madoc	190	1,130
Wheatley	167	761	Port Carling	270	520	Marmora	122	1,004
Windsor	48,886	104,415	Port Elgin	562	1,415	Martintown	33	P.V.
Woodbridge	614	946	Port McNicoll	104	950	Maxville	107	811
Woodstock	7,479	12,339	Port Perry	351	1,175	Millbrook	80	749
Wyoming	71	538	Priceville	10	P.V.	Morrisburg	305	1,484
York Twp.	18,859	77,175	Ripley	107	420	Napanee	1,443	3,241
Zurich	153	P.V.	Rosseau	38	305	Newcastle	185	701
(25 and 66-2/3 Cycle)			Shelburne	253	1,053	Norwood	125	710
Hamilton	147,848	164,719	Southampton	544	1,467	Omeme	172	630
St. Catharines	29,924	34,541	Stayner	316	1,106	Orono	79	P.V.
Trafalgar Twp.	597	V.A.	Sunderland	75	P.V.	Oshawa	17,376	26,610
(66-2/3 Cycle)			Tara	122	510	Ottawa	36,957	150,861
Bronte	178	P.V.	Teeswater	127	873	Perth	1,845	4,197
Oakville	1,060	3,369	Thornton	35	P.V.	Peterborough	12,831	24,977
GEORGIAN BAY SYSTEM			Tottenham	91	532	Pictou	1,235	3,400
(60-Cycle)			Uxbridge	390	1,480	Port Hope	2,531	4,997
Alliston	410	1,700	Victoria Harbour	75	979	Prescott	1,428	3,283
Arthur	160	1,089	Walkerton	974	2,534	Richmond	82	428
Bala	272	355	Waubushene	126	P.V.	Russell	70	P.V.
Barrie	3,985	9,559	Warton	269	1,750	Smiths Falls	2,899	7,741
Beaverton	330	941	Windermere	32	117	Stirling	333	947
Beeton	142	617	Wingham	705	2,149	Trenton	5,206	8,183
Bradford	194	1,041	Woodville	63	439	Tweed	255	1,181
Brechin	72	P.V.	EASTERN ONTARIO SYSTEM			Warkworth	68	P.V.
Cannington	213	761	(60-Cycle)			Wellington	334	948
Chatsworth	85	333	Alexandria	193	1,976	Westport	99	725
Chesley	560	1,812	Apple Hill	56	P.V.	Whitby	1,433	4,236
Coldwater	135	545	Arnprior	1,264	4,019	Williamsburg	87	P.V.
Collingwood	2,744	6,249	Athens	132	626	Winchester	387	1,017
Cookstown	89	P.V.	Bath	52	325	THUNDER BAY SYSTEM		
Creemore	153	661	Belleville	7,741	15,498	(60-Cycle)		
Dundalk	257	686	Bloomfield	148	636	Fort William	14,085	30,370
Durham	427	1,874	Bowmanville	2,578	3,850	Nipigon Twp.	224	V.A.
Elmvale	156	P.V.	Brighton	451	1,462	Port Arthur	20,508	24,217
Elmwood	63	P.V.	Brockville	4,939	10,576	NORTHERN ONTARIO		
Flesherton	58	452	Cardinal	364	1,602	PROPERTIES		
Grand Valley	147	645	Carleton Place	1,921	4,143	Nipissing District		
Gravenhurst	1,080	2,261	Chesterville	283	1,094	(60-Cycle)		
Hanover	1,371	3,190	Cobden	81	643	North Bay	4,687	16,013
Holstein	21	P.V.	Cobourg	2,250	5,907	Patricia District		
Huntsville	1,142	2,943	Colborne	216	960	(60-Cycle)		
Kincardine	767	2,483	Deseronto	229	1,002	Sioux Lookout	295	1,967
Kirkfield	26	P.V.	Finch	106	396	Sudbury District		
Lucknow	412	856	Frankford	177	1,095	(60-Cycle)		
Markdale	197	776	Hastings	105	823	Capreol	218	1,660
Meaford	697	2,759	Havelock	108	1,103	Sudbury	9,084	35,812
Midland	4,273	6,764	Iroquois	244	1,123			
Mildmay	158	764	Kemptville	374	1,230			
Mount Forest	491	1,936	Kingston	13,287	29,545			





# STARDUST

*"Our blessings are as the star-dust  
Strewn by the hand of God."*

★ Cluster of stars in a winter sky . . . shadows of dusk drifting into night . . . shimmer of snow in the starlight, on field and roadway and roof . . . glow of lighted windows patterning the darkness . . . and distant chimes trembling through the stillness.

★ Christmastide . . . and the New Year beckoning . . . a fitting season for quiet thought and thankfulness.

★ For peaceful days and quiet nights . . . for homes secure and the laughter of little children . . . for food enough and to spare . . . for the right to live as free men live . . .

*Let us be grateful.*

★ For the bounty of the harvest gathered in . . . for the fertility of our fields . . . for the rich resources of mine and forest and waterway . . . for the glorious strength of this, our Canada . . .

*Let us give thanks.*

★ Of all we have endured . . . the sacrifices we have made . . . of unaccustomed task and sterner effort . . . and of our high resolve that freedom shall forever live . . .

*Let us be proud.*

★ In all we shall endeavour . . . in all we must achieve . . . in journey through the darker days that come before the dawn . . . in our unshaken faith in victory . . .

*Let us be unafraid.*

★ Nigh upon two thousand years ago, a Star led the Wise Men to the manger-throne at Bethlehem, there to hail the advent of the Prince of Peace. So may the steadfast stars inspire us to mightier effort and to greater sacrifice . . . that evil may be overthrown and that the day may swiftly dawn

*"When war is not, and hate is dead,  
When nations shall in consort tread  
The quiet ways of peace . . ."*

THE HYDRO-ELECTRIC POWER COMMISSION  
OF ONTARIO





HYDRO

# News



INDUSTRIAL X-RAY

VOL. 31

JANUARY, 1944

NUMBER 1



# Announcing New Uniform HYDRO RURAL RATES

## Effective JANUARY 1st, 1944

The Hydro-Electric Power Commission of Ontario announces new uniform rates for electricity to all consumers served by the Commission in the rural areas of Ontario, to become effective January 1st, 1944.

The new rates will result in a substantial saving to most Farm and Hamlet consumers, and their form is considerably simplified.

The new rate system provides for the following:

- A uniform rate to all Rural customers, now served direct by the Commission.
- The elimination of service charges to all farm users.
- The reduction of service charges to all Hamlet customers.
- The co-ordination of all present Rural Power Districts into one Provincial Rural Power System with the same meter rates applying throughout to the various classifications.
- The existing consumer classifications, totalling 11 in all, have been reduced to 5 clearly defined classes: i.e. 2 wire hamlet, 3 wire hamlet, farm, commercial lighting and summer cottages.

### New Rates Benefiting Approximately 97% of All Rural Consumers Are as Follows:

#### FARM SERVICE

##### NO SERVICE CHARGE.

First Block of 20 KwHrs.\* per Kilowatt of demand per month at 4c per KwHr.\*

Next Block of 60 KwHrs.\* per Kilowatt of demand per month at 1-6/10c per KwHr.\*

All remaining KwHrs.\* per month at 3/4c per KwHr.\*

Minimum charge \$0.75 per Kilowatt of demand per month gross.

Gross quarterly bill subject to 10% Prompt Payment Discount. This Farm Service rate applies to all Farms. In the case of "Standard" Farms of approximately 100 acres the demand is usually 3 Kilowatts and for these services the first block of KwHrs. is 60 while the second block is 180. On larger farms these blocks will increase in proportion to the Kilowatt demand.

\*(KwHrs.)—Kilowatt Hours.

#### 2 WIRE HAMLET SERVICE

Service Charge 55c per month gross.

First 40 KwHrs.\* per month at 4c per KwHr.\*

Next 80 KwHrs.\* per month at 1-6/10c per KwHr.\*

All remaining KwHrs.\* per month at 3/4c per KwHr.\*

Minimum charge \$1.67 per month gross.

Gross quarterly bill subject to 10% Prompt Payment Discount.

#### 3 WIRE HAMLET SERVICE

Service Charge 55c per month gross.

First 40 KwHrs.\* per month at 4c per KwHr.\*

Next 180 KwHrs.\* per month at 1-6/10c per KwHr.\*

All remaining KwHrs.\* per month at 3/4c per KwHr.\*

Minimum charge \$2.25 per month gross.

Gross quarterly bill subject to 10% Prompt Payment Discount.

\*(KwHrs.)—Kilowatt Hours.

These new rates apply only to rural consumers served direct by this Commission in Rural Power Districts established under Sections 71 to 79, inclusive, of the Power Commission Act. They do not apply to consumers in rural voted areas or townships operating under Section 54, of the Power Commission Act. In the latter areas, such as the townships of Ancaster, Brantford, East York, Etobicoke, London, Nipigon, North York, Scarborough, Toronto and Trafalgar, the present rates will not be affected.

As a result of these new rate reductions, Hydro Rural consumers will save an estimated amount exceeding \$500,000.00 per annum. Experience justifies the expectation on the part of the Commission that this reduction in revenue will be recovered in a short time through the increased use of electricity in the rural areas.

The application of these uniform rural rates will enable the Commission to later extend service to many areas not now served and to supply economically, consumers in the more sparsely settled areas. In most rural districts the new rates will provide a saving for the majority of consumers. The following examples indicate the estimated consumer saving in a district at present supplied under a rate of 6c per KwHr. for the first block and 2c per KwHr. for the second block.

#### STANDARD FARM CONSUMER

A comparison in 3 months' net cost if use is 450 Kilowatt-hours per quarter.

Present 3 months' cost in 6c and 2c districts	3 months' cost under new uniform rate	3 months' saving in these districts
\$15.63	\$10.38	\$5.25

#### 2 WIRE HAMLET CONSUMER

A comparison in 3 months' net cost if use is 225 Kilowatt-hours per quarter.

Present 3 months' cost in 6c and 2c districts	3 months' cost under new uniform rate	3 months' saving in these districts
\$10.29	\$7.32	\$2.97

Space does not permit us to detail all of the changes in connection with the new Hydro Rural rates, such as those affecting commercial, industrial and summer cottage users. If further particulars are desired, inquire of your district Rural Power Superintendent or contact The Hydro-Electric Power Commission of Ontario, 620 University Avenue, Toronto.

## THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO





## THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

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•  
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### The Front Cover



**T**HIS month's arresting front cover illustration entitled "Industrial X-Ray," directs attention to an apparatus which has been long indispensable to the doctor and dentist and which is now also doing an important job in industry. The photograph, made available through the courtesy of Canadian General Electric Company, Limited, shows one of the latest industrial x-rays—a million-volt unit—being used in the detection of flaws in a steel casting.

Volume 31

January 1944

Number 1

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## AN EFFICIENT AID

**I**N meeting the electric power requirements of more than 900 Ontario municipalities, large and small, The Hydro-Electric Power Commission is rendering a public service of first-ranking importance. The magnitude of this obligation is accentuated during time of war, and in order to conduct the administration of the enterprise with the highest degree of efficiency, the most modern facilities have been utilized.

While the volume of accounting routine and detail work is, of necessity, enormous, the use of high-speed, electrically-operated accounting machines enables the Commission to record, analyse and classify its day-to-day activities in a speedy and efficient manner.

In this issue of Hydro News attention is drawn to the functions of modern electric accounting machines in the head office of The Hydro-Electric Power Commission.

★ ★ ★

## A FINE PUBLIC SERVICE

**T**ORONTO'S present pre-eminent position in the field of public transportation has been achieved through the vision and enterprise of men who have been untiring in their efforts to serve their fellow citizens. In this connection the names of Sir Herbert Couzens, the late D. W. Harvey, H. C. Patten, Lt.-Col. A. S. McArthur and Major H. W. Tate, all of whom are engineers, are closely linked with the development of the Toronto Transportation Commission.

This issue of Hydro News features an article entitled, "From Horses To Horsepower," which focuses attention on the interesting historical background of Toronto's transportation service. There are many resi-

dents in the Queen city to whom the illustrations of the early omnibuses and horse-cars will bring back vivid memories of fifty and sixty years ago.

Plans now being made for the post-war era would indicate that the T.T.C. will exercise in the future the same foresight and imagination that have characterized their efforts in the past, and even greater achievements will result from the marked progressive spirit of this outstanding organization.

★ ★ ★

## YEAR OF ACHIEVEMENT

**A**NOTHER milestone in the lives of men and in the destiny of nations has been recorded with the passing of 1943 into the archives of history.

With the dawn of a new year it is the wont of man to pause briefly as he surveys the achievements and shortcomings of the past before going forward in a spirit of high resolve to meet the challenges of the future.

In the annals of Hydro, 1943 will be recorded as another year of noteworthy service to the people of Ontario and to the war effort of Canada. In the construction of new projects alone, many major undertakings have been completed and placed in operation. Among these undertakings were the gigantic Ogoki diversion, the new DeCew Falls generating plant and the 110-kv. transmission line which covers a distance of 120 miles between Port Arthur and the Steep Rock Iron Mines Limited.

These represent but a few on Hydro's list of 1943 achievements, but they reflect the Commission's close adherence to the policy of playing its full part as a contributing agency in the arsenal of democracy. There will be no deviation from that policy in the momentous months ahead.

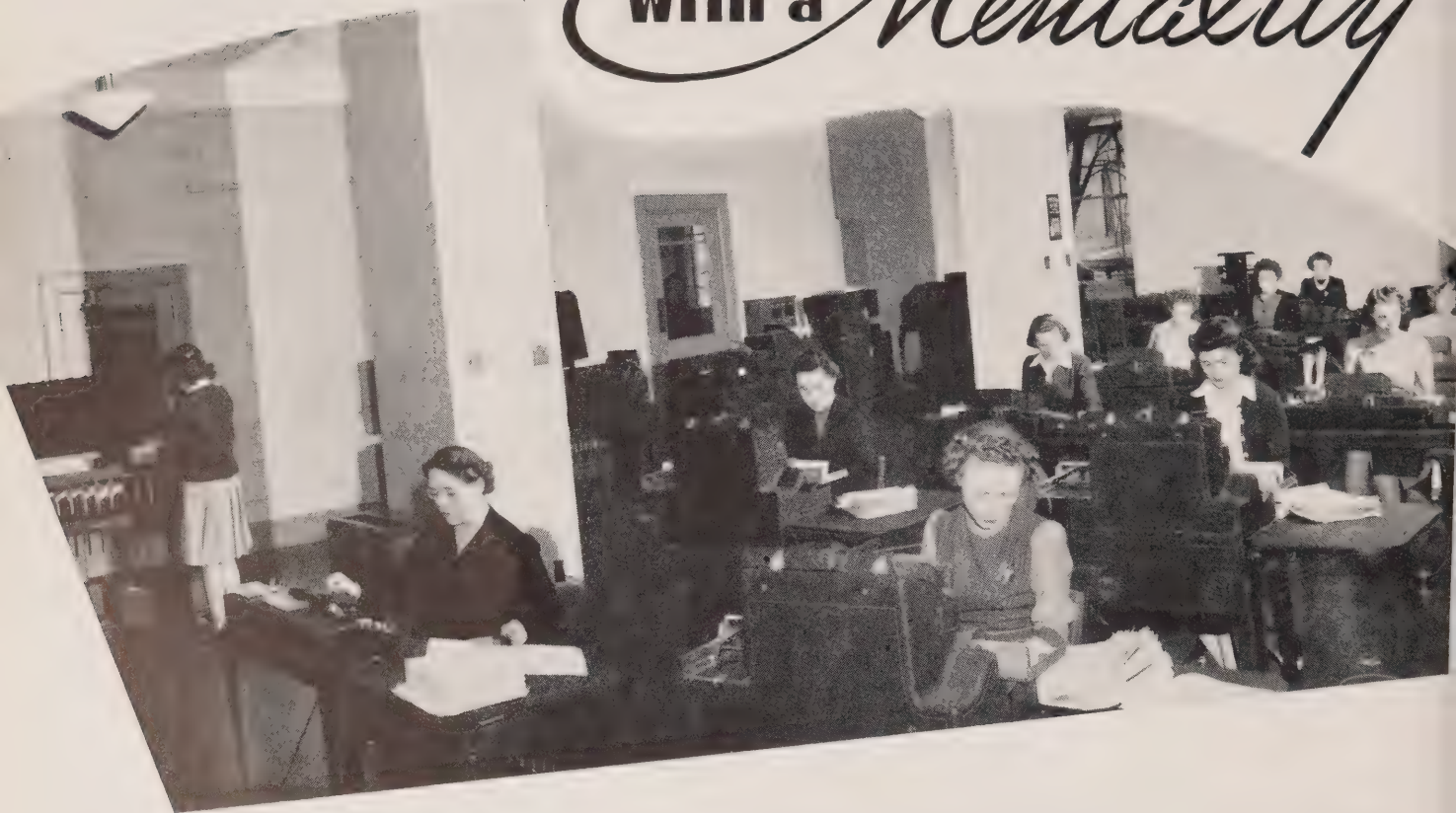
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MIGHTY BULWARKS on the food front are the fully mechanized grain elevators at Port Arthur and Fort William. The illustration on Page Two provides an interesting impression of one of the Fort William grain bastions which is reported to be the largest in the world.



# MACHINES with a

# Mentality



THIS IS a view of the tabulating section of the H.E.P.C. accounting department, where high-speed electric business machines handle a large volume of accounting routine.

**G**ONE are the old counting-house days when long rows of stiff-collared clerks, straining their eyes beneath green visors, sat at high, dimly lighted desks entering endless columns of figures in cumbersome ledgers. The advances in science and accounting practice down through the years have brought about many sweeping changes in the method of recording detailed transactions. Today, in place of tedious handwritten entries and calculations, the business world is served by sleek, compact electric accounting machines which perform mathematical wonders with lightning-like rapidity.

In the Toronto head office of The Hydro-Electric Power Commission of Ontario, in bright, spacious surroundings, a small tabulating staff, specializing in the operation of these modern machines, handles thousands of routine accounting transactions daily. The magnitude of the Commission's operations in supplying the electric power requirements of more than 900 Ontario municipalities entails an enormous amount of departmental routine. By the use of electrically-operated machines, the day-to-day activities of Ontario's extensive Hydro enterprise are recorded, analysed and classified in a highly scientific manner. Because of its versatility, this speedy electric equipment is used by the Commission for such purposes as payroll, accounts payable, cost of power, loads and revenue, open work orders, stores disbursements and related accounting. Head of the H.E.P.C. accounting department is Alexander McPherson, while the tabulating section, where the electric machines are used, is under the supervision of George Foster.

Since very early times man has kept records of his transactions with others, but often such records were of a rather fleeting character. As time went on and the world advanced from the patriarchal age to a form of community life with the development of hamlets and small cities, barter and commerce made it necessary to have more suitable records. It remained for the Assyrians, about the year 700 B.C., to develop a form of record which was immediate, permanent and reliable. They recorded their transactions or agreements by means of a stylus on soft clay which, when baked, became an enduring record somewhat in the shape of a briquette. Each of the contracting parties retained one of these "documents" and when the day for settlement arrived, payment was made in accordance with the terms arranged.

The records of Assyria and Babylon were quite similar to those developed later by the Egyptians, who inscribed a record of their transactions on papyrus (whence comes our word "paper"). Some of these early forms of record are on display in the larger museums.

A notable turning-point in record-keeping was made some hundreds of years later by the merchants and bankers of Lombardy, the great Italian mercantile centre. They already had what is known as a chronological record—wherein the date of the contract was recorded, together with the date of payment and terms of agreement—but they established the basis of all modern accounting practice when they introduced analytical accounting or the ledger.



This basic principle of recording and classifying every feature of a transaction and giving the precise balance at any time, regardless of the number of entries, has been carried down to the present day.

With the advent of the punched-card electric accounting machines, a radical change took place in the form of record. Today these high-speed machines enable business and industry to record, classify and correlate a multiplicity of transactions and obtain up-to-date information for periodic reports and financial statements. This type of equipment has been adapted to the needs of The Hydro-Electric Power Commission in its functions as a public utility.

The basic unit of this method of accounting is the punched card. Holes are punched in a card at various points by key-punch equipment to represent the information being dealt with, thus giving the card a physical property. The information on the card is then verified, classified by a sorting device and permanently recorded by an accounting machine. The department has other electric equipment available for reproducing in punched card form the information appearing on another set of punched cards; for interpreting the characters represented by the holes punched in a card; and for multiplying and totalling figures with lightning-like speed. A description of the principal equipment used follows:

### Alphabetical Key Punch

This machine is used to punch both alphabetical and numerical data into the cards. Working from an original invoice or sheet, an operator records all desired information, such as amounts, items, quantities, etc. The date, account number and other information common to a number of cards are automatically duplicated from a master card at the top of the machine. Working at average speed, an operator can punch 2,000 or more of these cards per day.

The verifier proves mechanically the accuracy of the punching and detects errors. At this machine the operator proceeds as though punching the card, using the original data as the source of information. When the key action coincides with the previously punched holes, the card is ejected from the machine automatically. When a key cannot be depressed, the passage of the card through the machine is stopped, signifying that an error has been made.

### Sorting Machine

After cards have been punched and verified, they are ready for the horizontal sorter. This equipment automatically groups all cards of similar classification, at the same time arranging classifications in numerical or alphabetical sequence. The machine operates at a speed of 400 cards per minute. An added selecting device makes possible the selection of a given card or group of cards without disturbing the sequence of the file.

### Accounting Machine

The alphabetical accounting machine represents the final stage in accounting routine. It is a multiple subtracting, adding, classifying and printing machine producing complete printed reports from the punched cards. It will also write cheques; make alphabetical and numerical listings from individual punched cards; print classifications; accumulate and print totals, net totals, etc. The machine is equipped with an automatic plugboard, similar in principle to a telephone switchboard, by means of which any desired arrangements of data may be obtained from punched cards. Tabulating and listing are done at the rate of 80 cards per minute. The forms for recording the detail resulting from punched cards are fed to the tabulator

INVOICE DATE		VOUCHER NO.		NAME		VENDOR		INVOICE SERIAL NUMBER		DATE RECORDED		ORDER NO.		C.F.		DISCOUNT		NET AMOUNT	
MONTH	DAY					SYM-BOL	REF. NO.			MONTH	DAY								
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9

1130 DOE JOHN 479010 1203NAS39 1099 41 1,90000

I.B.M. 82125 506 LICENSED FOR USE UNDER CANADIAN PATENT NUMBER 315306

THE PUNCHED card is the basic unit of accounting by the electric accounting method. Holes punched in the card at various points represent the information to be handled. The card reproduced above is typical of those used by the tabulating section of the Commission's accounting department. After key punching, the card is verified, interpreted, and the coded information permanently recorded in printed form by other high-speed electrically-operated equipment.





WORKING FROM an original invoice or statement, this young lady punches both alphabetical and numerical data on the cards.

**RIGHT—THE HORIZONTAL** sorter automatically groups all cards of similar classification, at the same time arranging such classifications in numerical or alphabetical sequence.

**BOTTOM—THIS OPERATOR** is shown at the Automatic Multiplying Punch, which makes calculations at a rate of approximately 1200 items per hour.

in continuous style. To obtain exact registration at the point of typing, the forms are controlled by a mechanical aligning device.

### Reproducing Punch

This automatic device is used to reproduce in a set of cards the information already punched in another set. All or any portion of data punched in a card, either alphabetical or numerical, may be reproduced in any desired sequence. Where many copies are required, the machine will "gang punch" the information punched in a master card. Regardless of the number of holes to be punched, the reproducer operates at a speed of 100 cards per minute.

### Alphabetical Interpreter

To facilitate reading, filing, selection or reference, the alphabetical interpreter quickly reads the characters represented by the holes punched in the cards. The translating and printing are done at a rate of 3,600 cards per hour.

### Multiplying Punch

This machine multiplies with extreme rapidity any two amounts punched in cards; adjusts their product to the nearest whole number; punches the product into the card from which the factors were taken; and accumulates totals. It can also be made to cross-add and cross-subtract while multiplying, and in so doing it punches the total of the cross-addition or the net total. Calculating and punching on this machine are accomplished at a speed of approximately 1,200 items per hour.

The Commission has found many advantages in the use of electric accounting equipment and adoption of the punched card system. The card is reliable, as its information is verified after being punched, and it is permanent in the sense that the hole is something that cannot be altered or erased. In addition to providing an immediate means of obtaining desired information, the card carries a detailed description of each transaction.





One of the more important uses for specialized accounting equipment is in the preparation of payrolls, for both head office and field staffs. All time must be accumulated for the pay period (and extended in the case of hourly rates) to arrive at the gross amount. Then income tax has to be calculated, Unemployment Insurance figured, and all other deductions such as Victory Bonds, War Savings Certificates, Pension Fund, hospital plan contributions, etc., properly recorded, cross-added and deducted from gross pay to arrive at net pay. Payroll and salary cheques are then prepared, together with individual statements on each cheque showing the "breakdown" of salary. Each employee's Unemployment Insurance book must be currently posted and all labour charges distributed to charge accounts.

In the case of accounts payable, all invoices must be properly recorded; cheques and remittance slips prepared for release on due dates (to take advantage of discounts); and then all moneys distributed, for any purpose whatsoever, are recorded under charge accounts.

All labour and material costs on current projects are assembled under "open work orders." This provides a day-to-day picture of actual costs, in relation to estimates, of any work in hand. Similarly, material withdrawn from the Commission's stores, for new construction, maintenance or other purposes, is recorded under various accounts.

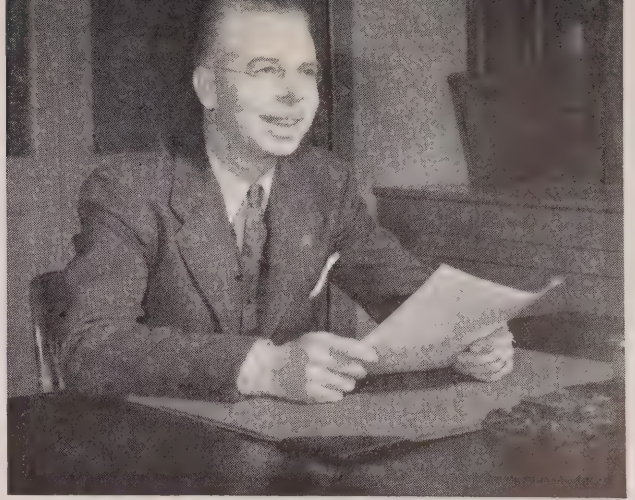
For the Annual Report and other statements furnished from time to time by the Commission, electric accounting machines enable classified information to be assembled quickly. Records are kept of loads and revenue by customer, class of customer and system, on a current-month basis, as well as for the elapsed period of the year. For comparative purposes, loads for the corresponding period of the previous year are at hand, indicating an increase or decrease in power use and revenue.

To determine the share of the Commission's costs payable by each of the many co-operating municipalities and other customers served is a complex annual task, involving hundreds of thousands of calculations. Electric accounting methods are particularly well adapted to this purpose.

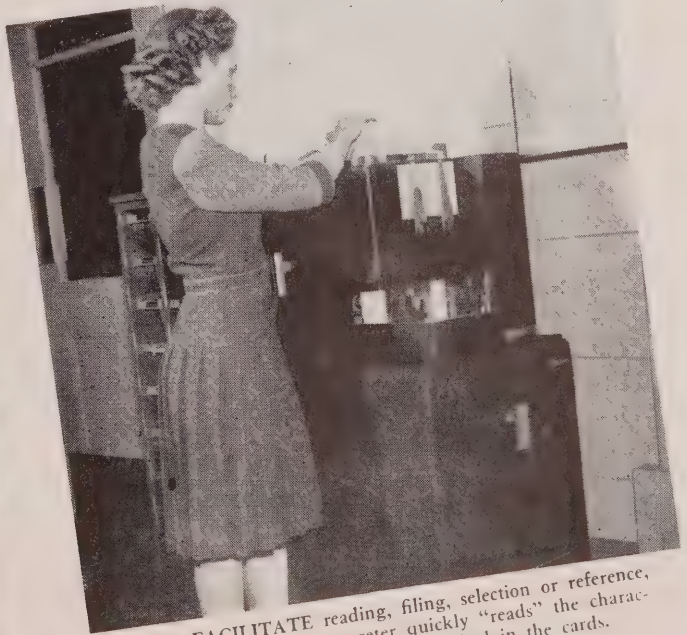
The electrically-operated accounting equipment installed by the Commission is performing an important function in the administration of a vast public-ownership enterprise.

**CENTRE IS** the Alphabetical Accounting Machine, which produces complete printed reports from punched cards, and is capable of tabulating and listing at the rate of 80 cards per minute.

**OPERATING AT** a speed of 100 cards per minute, the Automatic Reproducing Punch, below, is used to reproduce on a set of cards all or any part of the information punched in another set.



**GEORGE FOSTER**, supervisor of the tabulating section of the H.E.P.C. accounting department.



**TO FACILITATE** reading, filing, selection or reference, the Alphabetical Interpreter quickly "reads" the characters represented by holes punched in the cards.







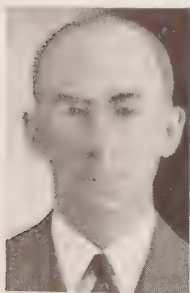
# Light Atmosphere

## IN THE HOME

A LARGE bay window, as shown left, can be attractively illuminated by using lamps concealed in the ceiling. A pale, yellowish light reproduces the impression of sunlight.

By George G. Cousins,  
Supervising Lighting Engineer, H.E.P.C.

**B**ECAUSE tradition wields a powerful influence upon the decoration, furnishing and lighting of homes, any discussion on home lighting must take into consideration how a change in the type of illumination is going to affect the appearance of the rooms.



George Cousins

The introduction of the inverted-reflector portable lamps a few years ago furnishes a good example of the antipathy on the part of the lady of the house to change. In spite of the outstanding merit of these lamps from the sight conservation viewpoint, they were not readily accepted. Their distinctive effect was to produce more general illumination throughout the room.

Now comes an entirely new light source with different characteristics,—the fluorescent lamp. Is it suitable for the home? As every home-maker has

her own ideas about the furnishings and decoration of her own home, no one person can answer the question directly. Consequently, in what follows an attempt will be made to point out the differences between the effects produced by tungsten lamps which are well known, and the fluorescent lamps which are new.

In the first place, fluorescent lighting is not yet suitable for indiscriminate use in residential lighting on 25-cycle power which, in Ontario, serves the southern part of the province in an area bounded on the east and north by a line running north from West Hill to Sutton, then south

and west to Bradford, Orangeville, Mount Forest to Lake Huron north of Goderich. The 25-cycle power produces flicker except when two 40-watt fluorescent lamps are used in pairs. When used in this way the flicker from one lamp neutralizes that from the other. This type of installation is satisfactory for industrial or commercial establishments where the lamps themselves are not in the ordinary line of vision. All fluorescent lamps require an auxiliary called a "ballast" which is available only for two 40-watt lamps for operation on 25-cycles. Smaller sizes of lamps can, of course, be used in pairs or singly in 60-cycle districts.

One distinctive difference between tungsten and fluorescent lamps is that tungsten lamps radiate light from filaments that occupy small spaces, while fluorescent lamps are all tubular in shape, varying in length from nine inches, 6-watts; to 60 inches, 100-watts. This has a most decided influence upon fixture design. For example: a tungsten lamp fixture or portable lamp of, say 18 inches diameter, may accommodate lamps up to 500 watts, whereas two 100-watt fluorescent lamps would supply about the same amount of light. A fluorescent lamp installation for this amount of light would involve the use of one fixture (for two 100-watt lamps) about 5 feet long by 15 to 18 inches wide, or 10 feet long by 8 to 10 inches wide; or four 40-watt fluorescent lamps in one fixture 4 feet long by 12 or 15 inches wide; or two fixtures each 4 feet long by 8 to 10 inches wide.

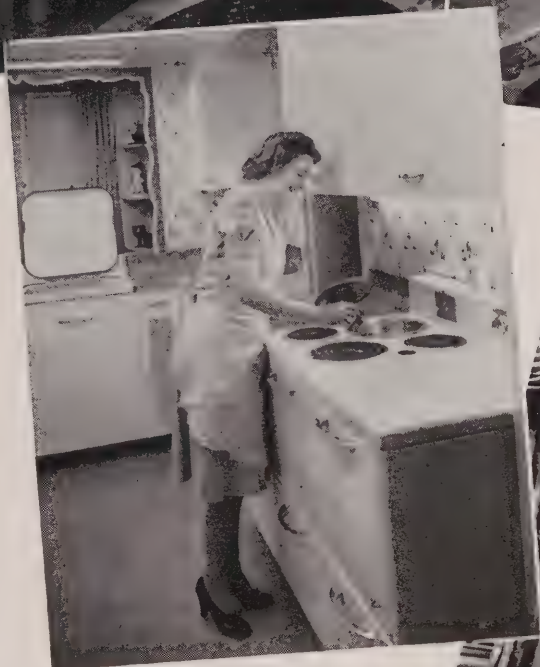
It is obvious that such bulky fluorescent fixtures would appear ponderous in a living or dining-room. However,

*(Continued on page 10)*





A CEILING fixture provides general illumination in this living room. There is localized lighting for reading, while lamps in the cornice box light up the drapes and blinds.



IN THE kitchen, tubular lamps, either fluorescent or lumiline, located under the cupboard, provide excellent lighting for the top of the range as shown here.

WELL-DESIGNED portable lamps distribute soft, general lighting and high intensity illumination within their immediate area. Conveniently placed, they provide excellent lighting for reading.



THOSE WHO like reading in bed will find a fluorescent or lumiline lamp satisfactory. The lumiline lamps are tubular tungsten lamps which are either 12 or 18 inches long.



EXCELLENT DIFFUSION and intensity are provided by fluorescent lighting over work benches and laundry tubs. A typical example is shown in this illustration.

## LIGHT ATMOSPHERE

(Continued from page 8)

the tubular shape of fluorescent lamps renders them readily adaptable to installation in coves in the walls or in inverted troughs flush with the ceiling. In fact, the tubular form in varying lengths provides endless possibilities for light patterns in the ceiling or wall panels. This type of lighting would be particularly appropriate in houses of modern style, but probably would appear out of place in houses of traditional period design, because the light sources of earlier days were smaller in size.

There are many special applications of light in the home for which fluorescent lamps are particularly well suited. The kitchen is a place where the housewife spends considerable time at painstaking work. This is the place where bright cheerful light in every corner is desirable. For the general illumination of the kitchen, flush or surface mounted ceiling units are neat in appearance and efficient in operation. Suspended fixtures are generally too massive for small rooms with 8 to 9 foot ceilings. Then there are the places where localized light is required, such as over the sink and above the service counter where food is prepared. The fact that the lamps are in the form of slender tubes (see the table at the end of this article), makes it easy to place them in small spaces in soffits and cupboards so that the light can be localized where it is needed without the lamps being conspicuous.

Other places where the tubular form is preferable are at the sides of dressing tables and bathroom mirrors.

The recreation room is usually in the basement where the ceiling height is limited. Here is a good opportunity to install fluorescent lamps in inverted troughs between the joists of the floor above. The broad diffused light is particularly good for ping-pong and other games. It is also a simple matter to so shield the lamps that glare is negligible.

In living and dining rooms, a very pleasing effect can be produced by installing yellow fluorescent lamps in soffits in the ceilings of bay windows, the effect simulating sunlight entering the windows.

In most cases where special effects are desired the choice of light source, fluorescent or tungsten, depends largely upon the most appropriate character of shadows. Where a broad shadowless effect of light is desired fluorescent lamps should be used, but where a smaller spot effect is sought, tungsten lamps are more suitable.

One thing that the prospective user of fluorescent lighting must bear in mind is the effect produced by fluorescent lamps on coloured surfaces. The natural colour of tungsten lamp light is pinkish yellow and although colours appear to be different under tungsten light to what they are under daylight, this difference is not important in residential lighting because the colour of artificial light is always much the same. Fluorescent lamps, however, are made in three different so-called whites, each of which has its peculiarities when reflected from coloured surfaces. These are soft white (which is pinkiest white); 3500-degree white (a compromise between tungsten lamp color and sunlight), and daylight (a bluish-white).

The daylight is a cold bluish-white which is of specific value in sorting and matching colours. It is not a pleasing colour for the home. The 3500-degree white is a general purpose white, the one most commonly used. The daylight lamp suppresses or dulls the yellow, orange and red

and enhances blue and blue-green. It makes fresh meat look like stale meat. It also adversely affects the complexion: makes a ruddy complexion look pale. The soft white suppresses the blue and enhances yellow, orange and red; improves the complexion. The 3500-degree white has a less pronounced effect upon colours. Before deciding upon the use of fluorescent lighting it would be advisable to determine beforehand the effect these whites will have upon rugs, wallpaper, upholstery and other furnishings.

### Eyesight Conservation Important

One very important phase of home life, often overlooked, is that workers and school children use their eyes throughout the day at their various tasks; they come home at night to relax and rest, but usually they use their eyes just as intensely while resting as they do while working during the day. Many people are strongly averse to any change that might alter their schemes of decoration, including lighting, preferring to penalize the eyes of the family by inadequate lighting. The day is fast approaching when the importance of eyesight conservation will receive the consideration it demands. If a room is available that can be used for study, reading, needle-work or any of the other eye-tasks, by all means install the best lighting available. If the dining or living room has to do double duty, double-duty lighting is not difficult to provide. There are trilight tungsten lamps available for either ceiling fixtures or portable lamps. If fluorescent lamps are under consideration they may be easily wired so that at least two intensities of illumination will be available by using one or more of them at any one time.

Fluorescent lamps represent the latest development in light production. The necessity of good lighting for the manufacture of war supplies has led to their use in enormous quantities in industry. They have been slow to invade the field of home lighting for several reasons among which are cost, entirely new ideas regarding fixture design and complete change of the character or atmosphere of a room. They are not simple, foolproof devices like tungsten lamps. Each fluorescent lamp must have a ballast which may be too bulky to enclose in some fixtures, and a small starting switch in the fixture. Faults may develop in either the lamp, ballast or starting switch and they may not be easy to locate. These are disadvantages, however, which future developments may be expected to eliminate. Fluorescent lamps certainly possess distinctive merit and, when properly used, produce lighting of a quality that surpasses any other type of artificial lighting.

No home can be said to be well lighted until there is adequate lighting to enable the eyes to perform every visual task with no more than natural muscular fatigue.

After the war, the whole range of fluorescent lamp sizes will be available to people who reside in 60-cycle districts where this type of lighting equipment can be used without being subject to the difficulties experienced in 25-cycle areas. Just what the future may have to offer in the way of a solution to these difficulties cannot be predicted at present. However, it is not too much to expect that a solution may be found.

### DIMENSIONS OF FLUORESCENT LAMPS

Wattage size	6	8	14	15	20	30	40
Length, inches	9	12	15	18	24	36	48
Diameter, inches	$\frac{5}{8}$	$\frac{5}{8}$	$1\frac{1}{2}$	1	$1\frac{1}{2}$	1	$1\frac{1}{2}$

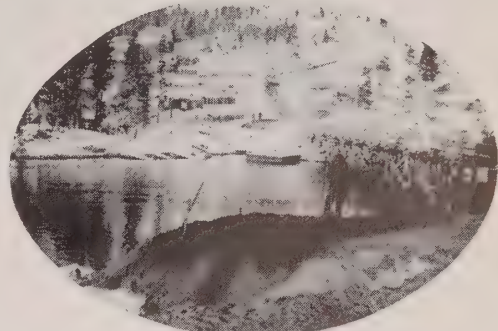


# LATEST PICTURES FROM STEEP ROCK



SCOWS ON which pumping equipment is mounted and the distribution station which supplies the necessary power are shown here.

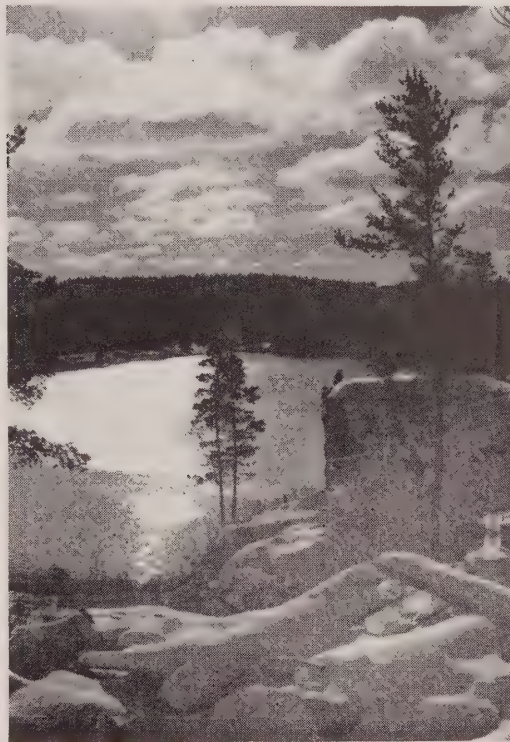
REPRODUCED ON this page are a number of interesting pictures taken recently at Steep Rock lake by A. H. Frampton of the Commission staff. With the completion of Hydro's 110-kv. transmission line, covering a distance of 120 miles between Port Arthur and Steep Rock Iron Mines, Limited, pumping operations are now under way to uncover iron ore deposits in the bed of this lake.



COMMENCEMENT OF the construction of the second and final coffer dam in The Narrows is shown here. Mining buildings are in the background.



THIS IS the first coffer dam which spans The Narrows at Steep Rock lake. Engineers report that the rock fill will be 60 feet wide on the crest.



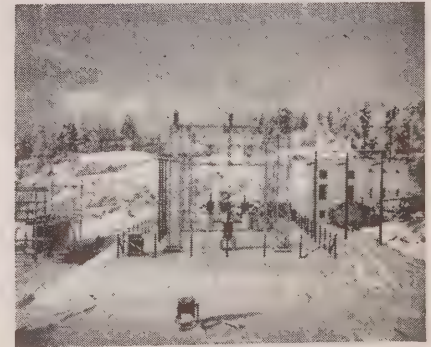
THIS PHOTOGRAPH accentuates the picturesque setting around Steep Rock lake. It was taken at The Narrows where the two coffer dams are located.



WORK OF diamond drillers is revealed in this reproduction showing the cut forming part of the diversion channel between Moose and Finlayson lakes.



IN THIS photograph is shown the new channel prepared for the diverted waters of the Seine after the river leaves Finlayson lake.



POWER FOR Steep Rock and to replace the closed-down Moose lake plant comes through the 110-kv. switching station at Moose lake.



# From HORSES



REPRODUCED ABOVE is one of the ten-passenger omnibuses used from 1850 to 1861. The sides of these stately conveyances were enhanced by scroll work done by hand in gold leaf.



HERE IS one of the early horse-cars, which travelled from the Union Station up Yonge street to North Toronto. Note the open platform where the driver was exposed to the elements.



OLD-TIMERS can vouch for the transformation which has taken place in the appearance of King and Queen streets in the past sixty years. For instance here's the kind of street car service the folks had in 1888.



THE FIRST snow-sweeper, drawn by twelve horses, created quite a sensation when it made its appearance in 1891, and the occasion was marked by an impressive civic demonstration.



WITH the clop-clop of quaint, horse-drawn, six-passenger omnibuses clattering over Toronto's cobbled streets and dirt roads was chronicled the first chapter in the history of a public transportation system which today ranks as one of the finest on the continent.

Introduced by H. B. Williams, an enterprising cabinet maker, nearly a century ago, these stately conveyances provided a ten-minute service between the St. Lawrence market and Bloor and Yonge streets for a sixpenny fare.

In the intervening years, many new and romantic chapters have been added, and the availability of low-cost Hydro power has helped bring about the transition that today finds smooth-riding streamliners gliding over rails which extend far beyond areas once regarded as "The Sticks."

The fleet of 946 street cars, operated by the Toronto Transportation Commission is now travelling over 297 miles of single track and transporting an average of 875,000 passengers daily. On passenger peak days—during the "Christmas rush"—over a million persons use these cars.

To make this service possible, Hydro provides 53,000 horsepower to the T.T.C., supplied principally through the Bridgman and Leaside transformer stations and distributed through seven Toronto Hydro-Electric System substations and seven T.T.C. substations.

## No Moving Parts To Wear

The most recent substations placed in service are equipped with Ignitron mercury arc rectifiers which operate on the principle that electric current will travel only in one direction through a mercury vapour arc. Unlike the large rotary converters, the new type of equipment occupies very little space, and with the exception of small supplementary pumps used to maintain the vacuum, there are no moving parts to wear. As a result, it is pointed out, maintenance and replacement costs will be lower. There are at present three of these new stations in different sections of the city, the equipment installed being the first of its kind to be used



# TO HORSEPOWER



in Canada.

The Toronto Hydro-Electric System supplies energy to the T.T.C. at 13,200 volts, alternating current, which in turn is converted and fed to the trolley wires at 575 volts, direct current. The fact that power is distributed over 150 feeders throughout the city means, according to T.T.C. engineers, that greater efficiency of operation is assured, voltage is better controlled, and trouble can be more readily located.

These modern methods which are associated with the operation of Toronto's public transportation system today are the results of untiring research work over a long period of years.

## Sought Service 100 Years Ago

To go back to the beginning, however, records show that as far back as 1849, the citizens of Toronto, which had been incorporated as a city 15 years prior to that time, were agitating for a public transportation system. To meet these insistent demands, H. B. Williams inaugurated his omnibus service. The four vehicles which provided this pioneer transit system, were equipped with removable windows and leather curtains for use in bad weather.

In spite of very poor road conditions, this pioneer public service gained immediate popularity, and inside of a year four ten-passenger omnibuses were added.

Continued popularity prompted further development, and during the next few years omnibus routes were extended to serve outlying districts. In this way, remote areas formerly inaccessible, became desirable building sites, which in turn contributed to growth of Toronto and a steady increase in the population.

By the time the year 1861 rolled around the idea was well established, and an enterprising citizen by the name of Alexander Easton obtained a 30-year franchise to inaugurate a horse-car street railway. Shortly afterwards the Toronto Street Railway Company was formed with Mr.



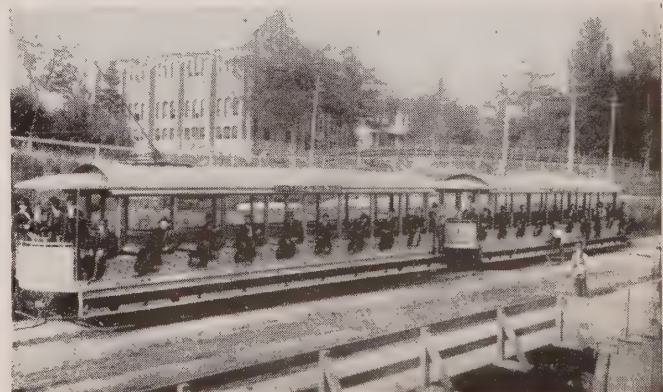
SAID TO be the first commercial electric railway in Canada, the above vehicle, constructed by the Exhibition authorities in 1884, ran from Strachan avenue westward to the Exhibition grounds.



IN 1892 the Toronto Street Railway Company electrified their system. Above is shown horse-cars which had been converted to an electric "train" and in regular service from 1891 to 1921.



OPEN CAR "trains," at the turn of the century, transported picnic crowds to Munro Park, near Scarborough Beach. Note "coffee pot" fare box in conductor's hand, and safety fender.



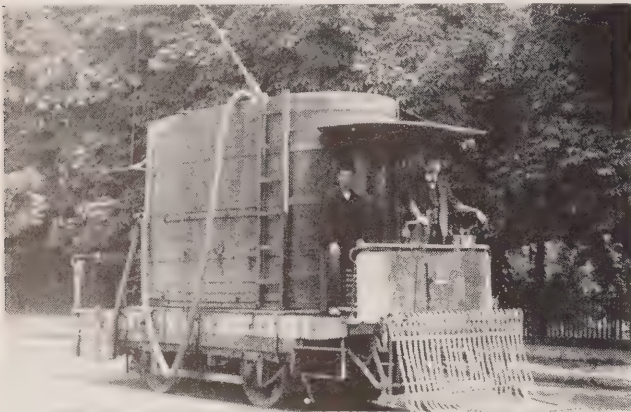
PICNIC PARTIES and moonlight excursions were very popular in the early 1900's, and open cars, similar to the one shown above, played an important part in these "get-togethers."



Easton as president, and Alexander Bleekly and Daniel Smith as directors.

This company operated a street car service on Yonge street from King to Bloor, on Queen street from Yonge to Ossington Avenue, and on King street from the Don to Bathurst street. According to the company's agreement with the city, the cars could not exceed a speed of six miles per hour. They were operated 16 hours a day during the summer months and 14 hours a day in the wintertime. No transfers were issued and a five cent fare was collected on each route.

It is interesting to picture the horse-cars used by the street railway in that they had 16-foot wooden bodies with open platforms front and rear, and were ventilated by drop windows, which quite often dropped at most unex-



**SPRINKLER CARS**, such as the one shown above, with a capacity of approximately 3,000 gallons, were introduced in Toronto about 1894, and were used daily to "lay the dust."

pected times. The heating system was very primitive and consisted only of pea straw being spread over the floor.

On the one-horse cars the fare boxes were hung inside the front door and, as passengers could enter by either the front or rear doors, it was more or less up to the individual whether he paid for his passage. On the two-horse cars a conductor passed around the old "coffee pot" fare box.

Another interesting memory is the snow sweeper which



**SHOWN HERE** is one of the early, electric, closed cars. These trolleys were of wooden construction and ventilated by drop windows.

made its first appearance in 1891. This was a large vehicle drawn by 12 horses.

In August, 1892, electric cars were introduced in Toronto, and although the majority of citizens were in favour of the change, certain horse fanciers and a few of the more timid people viewed with alarm the thought of these vehicles rushing madly along crowded thoroughfares. However, the "new contrivances" proved popular and, two years later, the last horse-car was withdrawn from service.

Although great strides had been made in Toronto's public transportation facilities, it was still thought to be inadequate in that it did not provide service for the outlying districts and there was also the problem of nine separate street railway systems which collected nine separate fares. These difficulties, it was claimed, retarded the city's progress, as it had been recognized that public transportation was essential to the business and social life of the community. When the question of the city taking over the Toronto Railway Company at the expiration of its franchise came before the electors on January 1, 1920, it was endorsed by an overwhelming majority.

As a result, all the city's public transportation services came under the control of a commission of three resident ratepayers appointed by the city council. And so the Toronto Transportation Commission's "service at cost" policy came into being on September 1, 1921. The first commission comprised P. W. Ellis, George Wright and Fred



**IN THIS** picture is shown a renovated Toronto Street Railway Company car, the seating having been rearranged and treadle system installed to improve loading and unloading conditions.

Miller, with H. H. Couzens (now Sir Herbert Couzens) as general manager and D. W. Harvey as assistant manager.

The day the T.T.C. assumed control, steps were taken to unify, extend and rehabilitate the services consigned to its care, and on that day passengers who formerly paid two or three fares for a single trip within the city, paid but one fare and obtained transfer privileges.

Many improvements in every phase of the service were incorporated in the extensive rehabilitation programme that followed. Among these was the installation of electric track switches at all points where cars turn on their regular routes. The device enabled motormen to set the switch points when approaching a curve simply by moving the power control handle. This eliminated countless delays



caused by the operators having to leave their cars to turn the switches by hand.

One of the first functions of the commission was to review its rolling stock, and after a thorough study of the latest designs, 250 steel bodied trolleys were purchased. Known as the Witt cars, these were of front entrance, centre exit plan and were equipped with double doors operated by compressed air. This marked another milestone of achievement in the transportation system and enabled Toronto to retain its place among the leading transit systems on the continent.

### Streamliners Introduced

Not content to rest on their laurels, the T.T.C. introduced in 1938 the new streamliners which completely revolutionized all former conceptions of street cars. These quiet, smooth-riding trolleys, upholstered in leather with rubber cushioning were designed to compete with the better type of private automobile, and in some ways simulates a motor vehicle. On looking into the front vestibule one finds on a desk in front of the operator's seat a row of small switch buttons which provide finger-tip control of the lights, gong, windshield wipers and other appliances. A flick of one of these little buttons and the doors pop open. Passengers enter and leave, and the doors quietly close. Motor power and triple brakes are controlled by foot pedals, and when the operator presses his foot down on the power pedal, 220 horsepower of electrical driving



IN THIS illustration is a smooth-riding streamliner which has a triple braking system, along with front entrance and centre exit features. These cars were first used in Toronto in the fall of 1938.

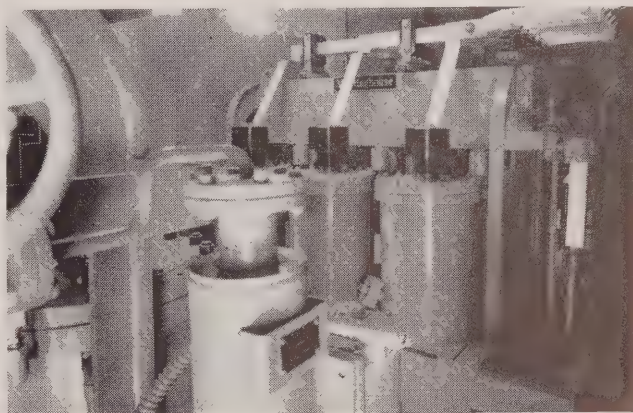
force surges through the motors and the car sweeps away in an effortless glide, picking up speed at better than four miles per hour per second.

An interesting feature on these cars is the triple braking system involving dynamic, air and magnetic track brakes that work automatically together or in sequence, ensuring quick stops under all conditions. Every precaution has been taken for the safety of the passenger, even to the provision of a "dead man brake." While driving, the operator rests his left foot on a control pedal. If the pressure on this pedal is released for any reason when the car is in motion—for instance, if the motorman should have a heart attack or faint—the power is cut off, the brakes are applied and the doors open. Another accomplishment

is that efficient ventilation and electrical heating have been combined into one unit to assure a comfortable temperature in all seasons.

It is worth mentioning that a radical departure in design has been carried out in the trucks where rubber springs have entirely replaced the former metal type. The wheels are built with rubber inserts, thus eliminating all noise and vibration.

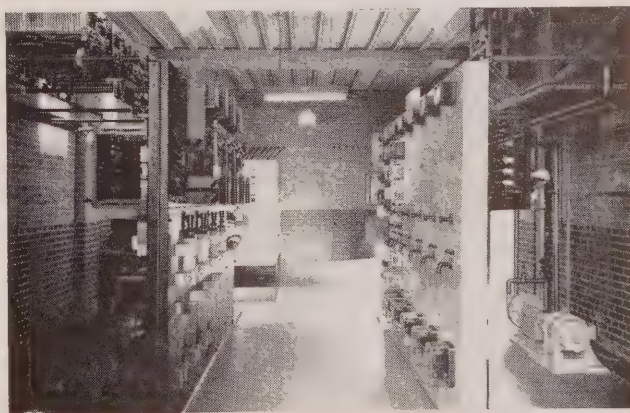
The T.T.C., under the able direction of William C. McBrien, chairman; William Croft, vice-chairman and W. G. Russell, commissioner, have spared no effort to provide up-to-date equipment and facilities, and since the inception



THESE ARE automatic Ignitron rectifiers, a new type of substation equipment, which operates on the principle that electric current travels only in one direction through a mercury vapour arc.

of the municipally-owned system, Toronto citizens have enjoyed a high standard of transit service at an average fare of 6.18 cents, as compared with an average of 8.05 cents collected in similar cities in the United States.

Among the many men whose names are closely linked with the development of the T.T.C. to its present pre-eminent position are Sir Herbert Couzens, D. W. Harvey (now deceased), H. C. Patten, the present general manager; Lt.-Col. A. S. McArthur, assistant manager in charge of operation and equipment; and Major H. W. Tate, assistant manager in charge of engineering.



SUBSTATIONS, one of which is shown above, located throughout Toronto, assure efficient distribution of energy over the T.T.C. network of trolley wires.



# at FORT WILLIAM



THIS IS the head office of the Fort William Hydro-Electric Commission at Donald and May streets. Originally constructed as a garage, it has been modernized and converted into spacious offices for the commission staff.

**S**YMBOLIZING the all-important role which food plays in both peace and war, the giant mechanized elevators which loom high on the waterfronts at Port Arthur and Fort William have a combined storage capacity for well over 90,000,000 bushels of grain.

From 1883 when wood was used to build the first 250,000-bushel capacity elevator at the head of the lakes, the story of the grain industry has been one of constant effort to keep pace with the production of the West.

At Fort William alone there are fifteen of these elevators which are among the largest in the world. They have a storage capacity for over 40,000,000 bushels of grain. In this community, as in Port Arthur, Hydro is the life blood of the industrial, commercial and domestic life.

While Fort William's contribution to the war production programme is one of first-ranking importance, the business of storing and shipping grain has assumed a new and vital significance in the light of world events.

Records show that the opening of the United States lock at the Soo in 1855 was a noteworthy event in the history of the grain trade. Before that time, a horse and cart were used to meet the demands of inter-lake traffic. Today this water artery is one of the busiest canals in the world.

The first cargo of grain, which was loaded by hand, was shipped down the lakes aboard the Erin, under Captain Sullivan, and the honor of loading the first cargo at the first elevator was accorded the Acadian, under Captain Malcolmson. While these events were hailed with delight by the residents, the volume of grain represented

is a mere trickle compared with the vast flood which now flows down the great lakes. In one day the record shipment from the Canadian lakehead, made in November, 1928, stands at 6,344,808 bushels.

## Industrial Possibilities Visualized

As far back as 1898 residents of Fort William had realized the necessity for electric power and had voted money for the installation of a generating plant. While water-power was available, its development was considered too costly for the municipality to attempt, so it was decided to install a steam-driven plant with a capacity of 200 horsepower. Increased demands, however, soon forced an expansion of this plant to 600 horsepower.

Visions of industrial possibilities in the Fort William area took shape with the arrival of Edward Spencer Jenison, of Chicago, who presented a plan for the development of power from Kakabeka Falls on the Kaministiquia river, where the river sweeps into a narrow gorge from a height greater than that of Niagara Falls.

These visions were made still more vivid by the signing of an agreement with the late W. W. Ogilvie for the erection of a large flour mill in Fort William. A site that cost the town \$25,000 was granted along with tax exemption for 20 years. In the same year, two bonuses were passed by the ratepayers of the town, one for a copper smelter and one for an iron smelter, neither of which, however, was taken up.

The Kaministiquia Power Company was formed, and commenced the ambitious development with the Ogilvie





MEMBERS OF the staff were at work when the upper photograph was taken. The illustration on the right shows the distribution station from which the city is supplied with power. The lower photograph shows the switching equipment in the distribution station.

mill as its one industrial customer, and a contract from the town of Fort William for the purchase of 600 horsepower. The work of harnessing Kakabeka Falls was completed in 1906, and the town closed its steam plant and turned power from the Kaministiquia Power Company into its distribution lines.

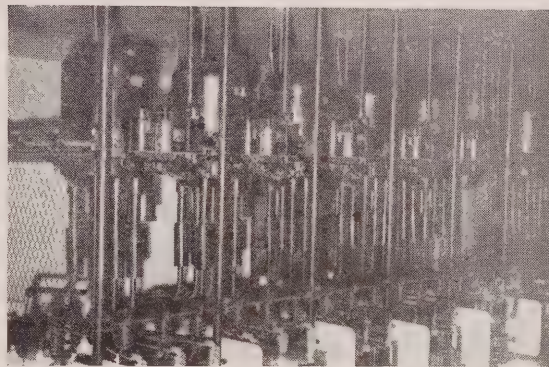
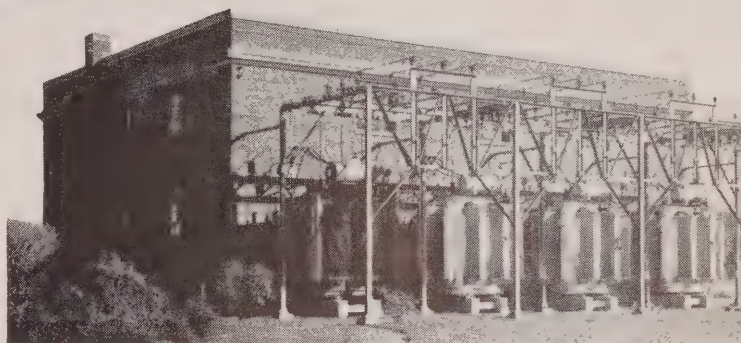
Power demands of the two cities, Fort William and Port Arthur, and of the constantly multiplying elevators and industrial plants continued to increase. Port Arthur entered into an agreement with the Hydro-Electric Power Commission of Ontario in December, 1910, and was supplied with power purchased from the Kaministiquia Power Company, on a ten-year contract. When this contract expired, Port Arthur was supplied with power from the Nipigon river development. It was not until December, 1926, when the contract between Fort William and the Kaministiquia Power Company expired that Fort William became a Hydro municipality, although the H.E.P.C. had been supplying the requirements of the Great Lakes Paper Company for some considerable time.

Hydro at that time in Fort William was under the direction of a commission comprising Col. S. C. Young, chairman; and W. J. Ross, and Mayor J. E. Crawford, commissioners. When this commission took over the operation of the system, the load was 7,700 horsepower. This has grown until today the load is 16,000 horsepower, and power is distributed over 97 miles of transmission lines to serve 7,120 domestic, 1,012 commercial, and 117 industrial consumers.

#### Leading Industries

The average kilowatt-hour consumption for domestic purposes in Fort William is one of the highest in Canada and the average rate paid ranks with the lowest.

Among the leading industries located in Fort William are the Canadian National Railways, Canadian Pacific Railway, Canadian Car and Foundry, Abitibi Paper Company, the Great Lakes Paper Company, Northern Engineering and Supply, Western Engineering and Supply, Ogilvie Flour Mills and, of course, numerous grain elevators. At present, the entire facilities of the Canadian Car and Foundry Company are being utilized for airplane production, while the



Great Lakes Paper Company lays claim to having the largest paper-making machine in Canada which is capable of producing a sheet of paper 304 inches wide.

The affairs of the Fort William Hydro-Electric Commission are now under the able direction of J. R. Pattison, chairman; C. H. Moors, and Mayor Garfield Anderson, commissioners; and C. J. Moors, manager.

While Fort William can trace its history back two and a half centuries, relics unearthed by archeologists support the contention that prehistoric peoples inhabited the district.

The massive cliffs of the Sleeping Giant, the rugged peak of Mount McKay and the lakes and valleys of the surrounding district are the stage upon which the gods and heroes of Indian legend and folk-lore played their parts.

It is here that relics of the "Mound Builders" who seem to have been the earliest metallurgists of the country,

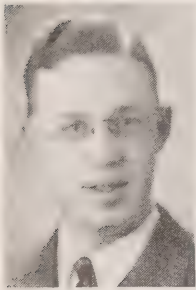
*(Continued on page 21)*



# Around the Hydro Circuit

## PROMOTION ANNOUNCED

Promotion of **JAMES W. HAMMOND**, chief accountant, to the position of assistant general manager was announced recently by the Hamilton Hydro-Electric Commission.



Born and educated in Hamilton, Mr. Hammond has been employed by the utility for the past 18 years. He joined the organization as a junior clerk, later becoming paymaster, assistant accountant, and chief accountant. In taking over the position of assistant general manager he will carry on the duties of chief accountant.

Mr. Hammond is chairman of the Hamilton Chapter of the Society of Industrial and Cost Accountants of Ontario, and is also a member of the committee on accounting and office administration of the Association of Municipal Electrical Utilities.

## MAYOR AT FORT WILLIAM

Mayor **GARFIELD ANDERSON** of Fort William was born in Allenford, Ontario, and was educated near Hepworth. After coming to Fort William, he took an active part in municipal affairs and was elected to the city council in 1935 and again in 1938, becoming mayor in 1943. This year he contested a seat in the provincial house and was the successful candidate.



He is particularly interested in gardening and also takes an active part in adult education, being interested in the study of consumer and producer co-operatives.

## FORT WILLIAM MANAGER

Manager of the Fort William Hydro-Electric Commission, is **CHARLES J. MOORS**. He was born in St. Catharines and came to Fort William in 1907 as superintendent of the electric light department.



In 1911 he was appointed superintendent of the telephone department, and later the street railways were placed under his direction. When the Hydro-Electric Commission was formed in Fort William, Mr. Moors became manager. Three years ago he gave up the managership of the telephone and street railway departments, which are operated by the city council.

## FORT WILLIAM COMMISSIONER

A native of Gateshead-on-Tyne, England, **J. R. PAT-TISON**, who has served on the Fort William Hydro-Electric Commission for the past ten years, came to Canada in 1907.

A staunch trade unionist for the past 35 years, he served two years on the Ontario executive of the Trades and Labour Congress of Canada.

In his earlier days, Mr. Pattison was an athlete of note, having played soccer with the Canadian Pacific Club when the team won the Dominion championship. His present association with active sport is confined to horse-shoes.



## O.M.E.A. VICE-PRESIDENT

Vice-president of District No. 3 O.M.E.A., **CLARENCE HERBERT MOORS**, has been a member of the Fort William Hydro-Electric Commission since 1937.

Born in Wisconsin, he came to Canada in 1908 and heeded the romantic call of "Timber." For ten years he worked as a scaler with the Pigeon River Lumber Company, and in 1919 he established his own business in Fort William which has grown steadily under his direction.

From 1919 until 1925 (with the exception of one year) Mr. Moors served on the city council. He was again elected to public office in 1929 and served until 1932 on the Board of Education. He is an enthusiastic sports follower, particularly of aquatic events.

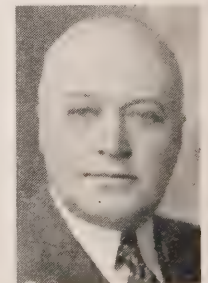


## ARNPRIOR CHAIRMAN PASSES

**THOMAS STEPHEN CHURCH**, chairman of the Arnprior Hydro-Electric Commission since its inception in 1939, died recently following a short illness. He was in his 62nd year.

Widely known in Renfrew County, of which he was warden at one time, Mr. Church was a successful merchant in Arnprior, and, during his career in public life, he occupied every municipal office in the community. When the local Hydro plant was taken over from the H.E.P.C., he relinquished most of his other public activities and devoted his time to Hydro affairs.

Mr. Church, who was born in Arthur, Ontario, is survived by his widow, formerly Clyde B. Boyd of Arnprior.





## OMEA. AND AMEU. WINTER CONVENTIONS

**P**OST-WAR planning and the application of electronics are two of the vital subjects which will come up for discussion at the forthcoming joint convention of the Ontario Municipal Electric Association and Association of Municipal Electrical Utilities scheduled to be held in the Royal York Hotel in Toronto on February 8 and 9, 1944. The following are the programmes made available to Hydro News by officers of the respective groups:

### OMEA. PROGRAMME

#### MONDAY, FEBRUARY 7

Evening: Registration; 6.30 p.m.—Executive dinner followed by executive meeting.

#### TUESDAY, FEBRUARY 8

Morning: 9.00 a.m.—Registration; 10.00 a.m.—Convention session; minutes; president's address; secretary's and executive's report; naming of committees; treasurer's report and report of finance committee; reading of resolutions; reports of the following committees: legislation; standardization; post-war; war problems; organization and publicity; pension and insurance.

Afternoon: 12.30 p.m.—Joint luncheon with A.M.E.U.; speaker, Professor Ralph E. Freeman, Massachusetts Institute of Technology, Department of Economics and Social Service, on "Economic Factors in Post-War Business."

2.00 p.m.—Joint meeting with A.M.E.U.; address by Thomas H. Hogg, B.A.Sc., C.E., D.Eng., chairman and chief engineer, The Hydro-Electric Power Commission of Ontario; discussion; moving picture of the Ogoki development.

Evening: 6.30 p.m.—Convention dinner with A.M.E.U. Speaker not yet decided upon; entertainment.

#### WEDNESDAY, FEBRUARY 9

Morning: 9.30 a.m.—Convention session; reports of committees; credentials; resolutions; election of officers; report of election of district directors; unfinished business; new business.

Afternoon: 12.30 p.m.—Joint luncheon with Electric Club of Toronto and the A.M.E.U.; speaker—John Mills, director, Bell Telephone Company Laboratories, New York City. Subject: "Electronics."

2.30 p.m.—Convention session; district reports; discussion of district reports; unfinished business.

O.M.E.A. executive committee meeting immediately following close of afternoon session.

### A.M.E.U. PROGRAMME

#### MONDAY, FEBRUARY 7

Evening: Registration.

#### TUESDAY, FEBRUARY 8

Morning: 9.00 a.m.—Registration; 10.30 a.m.—Convention session; president's address; reports; paper—"Industrial Heating in Industry", by C. A. Scarlott, editor of Westinghouse Engineer, East Pittsburgh, Pa.

Afternoon: 12.30 p.m.—Joint luncheon with O.M.E.A.

2.00 p.m.—Convention session with the O.M.E.A. (See O.M.E.A. programme). Election of A.M.E.U. officers; at the opening of the session the ballot will be closed and the results made known before the session adjourns.

Evening: 6.30 p.m.—Convention dinner with O.M.E.A. (See O.M.E.A. programme).

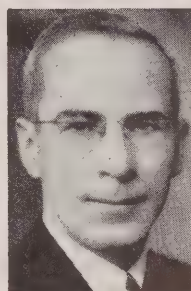
#### WEDNESDAY, FEBRUARY 9

Morning: 9.30 a.m.—Convention session; paper on "The Relation of Engineering to Accounting," by Paul Kellogg, president of Stevenson and Kellogg, management engineers, Montreal; paper on "Old Wiring" contributed by the electrical inspection department of The Hydro-Electric Power Commission of Ontario.

Afternoon: 12.30 p.m.—Joint luncheon with O.M.E.A. (See O.M.E.A. programme).

2.00 p.m.—Convention session; paper on "Electronically Controlled Equipment in Industry," by A. G. Turnbull, Canadian General Electric Company, Toronto.

## HELP PLAN CONVENTIONS



K. A. CHRISTIE



R. B. CHANDLER

With the annual conventions of the O.M.E.A., and A.M.E.U., only a few weeks away, Kenneth A. Christie, K.C., and R. B. Chandler, the respective presidents, are now busily engaged in putting the finishing touches to the programme details. Mr. Christie is vice-chairman of the Toronto Hydro-Electric System, while Mr. Chandler is manager of the Port Arthur Public Utilities Commission.

### A.M.E.U. ELECTION BALLOT

The ballot for the election of officers for the year 1944 will show the following as candidates:

President, S. W. Canniff, Ottawa (Acclamation).

Vice-president, R. J. Smith, Perth; J. E. Teckoe Jr., Tillsonburg.

Secretary, S. R. A. Clement, H.E.P.C. (Acclamation).

Treasurer, F. A. Archer, H.E.P.C. (Acclamation).

Directors, (from membership at large): A. W. Bradt, Hamilton; G. E. Chase, Bowmanville; C. L. McMann, Sarnia; L. G. McNeice, Orillia; R. S. Reynolds, Chatham; O. H. Scott, Belleville.

District Directors: Niagara District: J. R. Sullivan, Woodstock; O. C. Thal, Kitchener; Georgian Bay District: H. Campbell, Wingham; R. S. King, Midland; J. R. McLinden, Owen Sound; E. M. Soden, Huntsville; Central District: H. L. Pringle, Whitby; William Tait, Picton; Eastern District: W. P. J. Derham, Arnprior; M. W. Rogers, Carleton Place; Northern District: A. W. H. Taber, North Bay (Acclamation).



## AT-HOME IS SUCCESSFUL EVENT



OVER THREE HUNDRED H.E.P.C. employees and their friends attended the annual At-Home held under the auspices of the Ontario Hydro-Electric Club at the Club Top Hat recently. Included in the group shown in the upper photograph are Edward Houston, C. King, R. M. Laurie, J. Varnell, Mrs. F. B. Pope, James Simpson, Thelma Jenner, Bob Durham, Barbara Briggs, Dick Smith, Joyce Marsden, Lois Brittain, Eileen Handy, Warren Biggs, R. A. Lyle, Fred Pope, Wilf Morris, Matt Ward, Mrs. R. M. Laurie, Helen Dunlop, Yvonne Green and Al Neddrie.

On the left are members of the dance committee: F. B. Pope, Jean Fisher, Roy E. Taylor, chairman; Marian Corby, and W. V. Morris.

In the lower photograph the following were identified: Doris Aeberli, Wilf Aeberli, Olive Bell, Betty Taylor, June Wall, Joan Gilmour, Gwen Hall, Jimmy Steele and C. E. Murphy.

Proceeds from the dance go to the club's Consolidated War Services Fund for the purchase of comforts and cigarettes for Hydro employees on active service.





## 3,000 YEARS OF SERVICE GIVEN BY 90 EMPLOYEES

**D**URING the past year, 34 members joined the ranks of employees who have served The Hydro-Electric Power Commission of Ontario for 30 years, making a total of 91 to date whose combined record of service aggregates close to 3,000.

Included in last year's group are Dr. Thomas H. Hogg, chairman and chief engineer, and Otto Holden, chief hydraulic engineer.

A. H. McBride, cost accountant, has the distinction of being the oldest employee, in point of service, having joined the staff some 37 years ago.

The following are the names of members who completed 30 years' service during 1943:

NAME	DEPARTMENT	LOCATION
Amos, W. L.	Elec. Eng.	Toronto
Bucke, H. L.	Operating	Niagara Falls
Cookson, W. H.	Production	Toronto
Cooney, F. E.	Laboratory	Toronto
Durie, E. N. R.	Elec. Eng.	Toronto
Elphick, T. F.	Operating	Preston
Foster, George	Accounting	Toronto
Hare, M. C.	Construction	Toronto
Hogg, Dr. T. H.	Executive	Toronto
Holcombe, A. C.	Operating	London
Holden, Otto	Hydraulic	Toronto
Hull, A. H.	Elec. Eng.	Toronto
Ironsides, G. A.	Operating	Campbellford
Jeffery, J. J.	Municipal	Toronto
Jeffery, R. T.	Municipal	Toronto
Johnston, S. W.	Property	Toronto
Keogh, James A.	Operating	Guelph
Lang, A. G.	Elec. Eng.	Toronto
Logan, James	Accounting	Toronto
Mickler, G. J.	Budget	Toronto
Mills, W. H.	Operating	Dundas
Muehleman, H. J.	Operating	Toronto
McCuaig, Duncan	Accounting	Toronto
McFadyen, Thomas	Accounting	Toronto
McKenzie, D. A.	Operating	Toronto
Pace, Gordon	Operating	Toronto
Renshaw, H. A. C.	Municipal	Toronto (deceased)
Salisbury, W. A.	Operating	Toronto
Sawyer, A. B.	Purchasing	Toronto
Staines, George	Elec. Eng.	Toronto
Tideman, Harry	Municipal	Barrie
Wilson, R. J.	Operating	Waubashene
Worden, R. J.	Operating	London
Young, R. B.	Test. and Insp.	Toronto

The following are the names of members who have completed more than 30 years' service to date:

NAME	DEPARTMENT	LOCATION
Adderman, E. R.	Municipal	St. Thomas
Ainlay, William L.	Operating	Niagara Falls
Archer, E. G.	Elec. Eng.	Toronto
Austen, George	Operating	Walkerville
Barnes, A. S. L.	Test. and Insp.	Toronto
Belford, C. L.	Operating	Cooksville
Bell, J. G.	Operating	Sarnia
Caster, J. H.	Municipal	Toronto
Clark, F. W.	Hydraulic	Toronto
Clement, S. R. A.	Municipal	Toronto
Cousins, G. G.	Sales Promotion	Toronto
Curry, Geo. A.	Operating	Guelph
Davison, A. E.	Elec. Eng.	Toronto
Elliott, L. K.	Operating	Niagara Falls
Fawcett, W. H.	Accounting	Toronto

Gamauf, F. L.	Operating	St. Marys
Goodwin, A. C.	Elec. Eng.	Toronto
Grasett, C. S.	Operating	Toronto
Hagerman, J. C.	Operating	Toronto
Hewson, W. G.	Railway	Hamilton
Hill, Benjamin	Operating	Kitchener
James, T. C.	Municipal	Toronto
Lappe, E. S.	Operating	St. Marys
Lawrence, J. A.	Operating	Bracebridge
Lotimer, J. S.	Operating	Toronto
Martin, F. V.	Municipal	Essex
Mitchell, J. J.	Operating	Timmins
Moir, A. J.	Operating	Toronto
Moore, E. E.	Elec. Eng.	Toronto
Mulholland, B. F.	Municipal	Toronto
McBride, A. H.	Municipal	Toronto
McEvoy, Chas. G.	Filing	Toronto
McKenzie, William	Construction	Toronto
McPherson, Alex.	Accounting	Toronto
Pomfret, Ernest	Operating	Hamilton
Quigley, Alex.	Operating	Toronto
Richardson, S. M.	Operating	Toronto
Roberts, Estyn	Hydraulic	Toronto
Ronald, G. F.	Hydraulic	Toronto
Rous, G. L.	Operating	Toronto
Salter, B. O.	Purchasing	Toronto
Saunders, Geo. A.	Elec. Eng.	Toronto
Sheppard, Chas. H.	Operating	Niagara Falls
Smith, James P.	Operating	London
Staines, Samuel	Operating	Toronto
Steel, Ernest F.	Construction	Toronto
Sutherland, Wm. F. B.	Municipal	Beamsville
Taylor, E. J.	Accounting	Toronto
Taylor, Frank	Operating	Stratford
Terry, George G.	Operating	London
Thompson, R. M. A.	Municipal	Toronto
Trott, W. W.	Operating	Hamilton
Vloeberg, E. O. J.	Test. and Insp.	Toronto
Walker, W. O. G.	Construction	Toronto
Watts, Geo. L.	Operating	York
Wilson, J. N.	Municipal	Toronto
Woodley, C. T.	Operating	Niagara Falls

## FORT WILLIAM

(Continued from page 17)

are found. It was to this country that they came for the raw material from which they fashioned their primitive copper implements and weapons. Here and there on the mainland can be seen traces of the open pits from which they mined the copper by means of fire.

In 1803, Roderick McKenzie's fort was taken over by the North-West Company. It was rebuilt and became the New Fort until three years later it was called Fort William after the governor of the North-West Company, William McGillivray.

An epidemic of typhoid fever, due to the contamination of the river water, led the little group of only about 6,000 people to as ambitious an effort as was ever put forth by a town of its size. A tunnel a mile long was drilled through a mountain of solid rock to Loch Lomond 600 feet above the level of the town and a gravity water system was installed which sets Fort William for all time among the cities of the Dominion as possessing an absolutely pure water supply requiring no treatment.

These interesting facts reflect the noteworthy contribution Fort William has made to the development of Canada to date and presage the realization of a greater destiny in the years to come.





**I**N crossing the threshold of the New Year many Canadians have resolved to do certain things. Probably very few, however, have come forward with a resolution about the kind of food they are going to eat in 1944.

Actually, this is one of the most important and far-reaching of resolutions, because if it is faithfully followed day in and day out, it can contribute immeasurably to health and happiness not for just a year but throughout a lifetime. At the same time, it is patriotic to keep healthy for a healthy people are the warp and woof of a nation.

The fact that the Dominion Government is sponsoring a second Nutrition Campaign this month is, therefore, timely in that it will serve to reiterate important facts everyone should fully understand concerning the right kind of food to eat and essentials of a balanced diet.

Enquiries received from time to time by this column indicate that a number of Canadians have only a vague idea about the meaning of the word "nutrition." Briefly, it means the act or process of nourishing or being nourished, while Dr. E. W. McHenry, eminent Canadian authority on Nutrition defined it in the following way: "The science of nourishment concerned with a living organism."

A clear conception of the fundamentals involved in this business of eating is essential if one intends to give the subject the serious consideration it demands. A review of the following salient points would, therefore, appear to be in order at this time:

**Dietetics:** is the application of the principles of nutrition to the feeding of different ages, under different conditions, in health and in disease.

**Composition of Foods:** is the six groups of constituents called nutrients—carbohydrates, fats, proteins, minerals, water and vitamins.

**Classification of Nutrients:** (1) according to their function in the body (mechanical energy, building and repairing tissues, regulating body processes); and (2) according to their chemical composition.

**Essentials of an adequate diet:** to maintain the normal body in a state of health, a diet must contain:

(1) Sufficient carbohydrates, fats and protein to provide energy for muscular activity;

(2) Adequate protein for growth and maintenance of all body cells;

(3) Adequate amounts of minerals for bones and teeth and body regulators;

(4) An adequate supply of water for regulation of body processes;

(5) An adequate supply of each of the known vitamins for regulation of body processes.

**Protein Foods** (body building and repair): lean meat, fish, eggs, milk, cheese, whole grain cereals, vegetables,—

peas and beans (fresh and dried).

**Carbohydrate Foods** (supply heat and energy): starches and cereals—flours, spaghetti, potatoes, breads, dried peas and beans; sugars—sugar, molasses, honey, dried fruits.

**Fats** (supply heat and energy): meat fat, butter, cream, vegetable oils.

**Foods Containing Minerals** (regulating): milk, fresh vegetables, whole cereals, eggs, meats, fish.

**Foods Containing Vitamins** (protective): fresh vegetables, fresh fruits, outer coverings of grain, eggs, liver, milk, butter, salt-water fish.

**Water:** we should take 5 to 8 glasses of water daily in addition to that contained in foods.

## **TURKEY WITH TRIMMINGS SERVED AT LABORATORY'S NEW CAFETERIA**

Members of the H.E.P.C. laboratory staff at Strachan Avenue were hosts to fellow employees from other departments recently when a special Christmas luncheon was served in the laboratory's fine new cafeteria, turkey with all the trimmings having been provided for the occasion.

Arrangements for the event were made by the members of the committee under whose direction the cafeteria is operated. This group comprises A. L. Brown, chairman; C. D. Brock and R. E. Taylor, while Edith Emma Muir, Hydro Home Economist, had the co-operation of Mrs. Charlotte Bell, Mrs. Nellie Guerin and Emily James in the preparation of the menu.

W. P. Dobson, chief testing engineer of the H.E.P.C., announced that the new cafeteria had been given an A1 testing approval. It was a place, he said, where employees could meet in a spirit of good fellowship to discuss subjects of mutual interest.

### **NUTRI-THRIFT MENU**

#### **BREAKFAST**

Tomato juice; oatmeal and wheat germ; scrambled eggs; toast; jelly; coffee.

#### **LUNCH**

Macaroni and cheese; red cabbage salad; brown bread; canned berries; cookies; cocoa.

#### **DINNER**

Short ribs of beef; baked potatoes, browned parsnips; vitamin bread; cottage pudding with chocolate sauce; tea.

The basis of the daily menu plan includes: two to three cups of milk; one serving of potatoes; two servings of leafy or yellow vegetables; one serving tomatoes or citrus fruit; one egg or three eggs a week; one serving of meat, fish or meat substitute; four to six slices of whole wheat or Canada Approved bread with butter. This may include whole grain cooked cereal.



## NOVEMBER LOAD SUMMARY

**A** TOTAL primary load of 2,288,484 horsepower was supplied by The Hydro-Electric Power Commission of Ontario during November, 1943, an increase of 3 per cent over that supplied during the corresponding month of 1942. Combined primary and secondary loads likewise increased by 4.5 per cent.

The Commission's monthly load summary, based on the maximum 20-minute peak horsepower load for the period, covers all four Hydro systems and the Northern Ontario Properties.

### PRIMARY AND SECONDARY LOADS

	Maximum 20-Min. Peak H.P.		Per Cent Increase
	Nov., 1943	Nov., 1942	
Niagara System .....	1,821,984	1,736,729	4.9
Georgian Bay System .....	49,926	47,855	4.3
Eastern Ontario System .....	208,873	182,677	14.3
Thunder Bay System .....	131,247	117,962	11.3
Northern Ontario Properties ..	253,786	275,131	— 7.8
Total of All Systems .....	2,465,816	2,360,354	4.5

### KILLED IN ACTION

Sergeant **WILLIAM H. OAKLEY**, Wireless Air Gunner, R.C.A.F., who was formerly on the staff of the H.E.P.C. operating department, has been reported killed in action.

Sergeant Oakley entered the Commission's employ in March, 1939, in the distribution section of the electrical engineering department, and two years later was transferred to the operating department and served at Leaside transfer station until his enlistment in February, 1942.

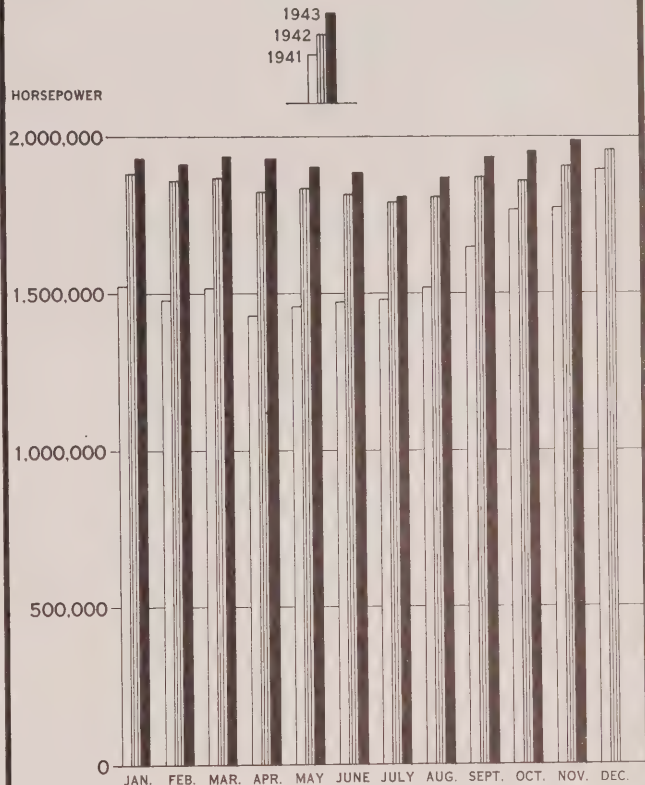
### REPORTED MISSING

**DOUGLAS ARTHUR NAISMITH**, R.C.A.F., who was on the staff of the H.E.P.C. construction department from April, 1937, to January, 1942, has been reported missing while on air operations.

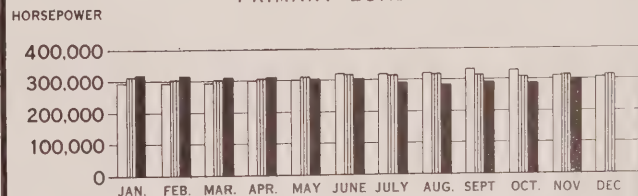


A PATROLMAN'S house, located at Fry Lake between Uchi mine and Crow river, is shown in the above illustration.

## SOUTHERN ONTARIO SYSTEMS NIAGARA — GEORGIAN BAY — EASTERN ONTARIO PRIMARY LOAD



## NORTHERN ONTARIO PROPERTIES AND THUNDER BAY SYSTEM PRIMARY LOAD



### PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	NOV., 1943	NOV., 1942	
NIAGARA SYSTEM .....	1,729,223	1,673,995	+ 3.3
GEORGIAN BAY SYSTEM .....	49,926	47,855	+ 4.3
EASTERN ONTARIO SYSTEM. ....	208,873	182,677	+ 14.3
THUNDER BAY SYSTEM .....	108,338	106,340	+ 1.9
NORTHERN ONTARIO PROPERTIES ..	192,124	210,252	— 8.6
TOTAL .....	2,288,484	2,221,119	+ 3.0



# MUNICIPAL LOADS, OCTOBER, 1943

## NIAGARA SYSTEM (25-Cycle)

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Acton	1,507	1,903	Erie Beach	12	21	Palmerston	535	1,400
Agincourt	196	P.V.	Essex	641	1,886	Paris	1,860	4,604
Ailsa Craig	119	487	Etobicoke Twp.	7,897	V.A.	Parkhill	184	1,029
Alvinston	102	649	Exeter	728	1,654	Petrolia	1,032	2,768
Amherstburg	877	2,704	Fergus	1,225	2,759	Plattsville	124	P.V.
Ancaster Twp.	375	V.A.	Fonthill	198	860	Point Edward	1,755	1,199
Arkona	58	403	Forest	569	1,562	Port Colborne	2,304	6,928
Aurora	1,360	2,821	Forest Hill	6,868	12,172	Port Credit	915	1,934
Aylmer	802	1,985	Galt	11,251	15,126	Port Dalhousie	918	1,599
Ayr	154	760	Georgetown	1,697	2,452	Port Dover	491	1,790
Baden	518	P.V.	Glencoe	188	763	Port Rowan	95	700
Beachville	710	P.V.	Goderich	1,629	4,674	Port Stanley	340	824
Beamsville	430	1,227	Granton	65	P.V.	Preston	4,022	6,656
Belle River	185	836	Grimsby	864	1,988	Princeton	124	P.V.
Blenheim	567	1,873	Guelph	10,658	23,074	Queenston	107	P.V.
Blyth	106	662	Hagersville	1,188	1,524	Richmond Hill	466	1,295
Bolton	190	629	Harriston	456	1,292	Ridgetown	584	1,986
Bothwell	128	683	Harrow	484	1,092	Riverside	1,181	5,235
Brampton	2,632	6,157	Hensall	192	686	Rockwood	107	P.V.
Brantford	21,609	31,622	Hespeler	2,524	2,938	Rodney	148	758
Brantford Twp.	1,267	V.A.	Highgate	90	322	St. Clair Beach	87	138
Bridgeport	145	P.V.	Humberstone	546	2,831	St. George	124	P.V.
Brigden	93	P.V.	Ingersoll	3,431	5,757	St. Jacobs	345	P.V.
Brussels	151	784	Jarvis	160	513	St. Marys	1,533	4,009
Burford	224	P.V.	Kingsville	560	2,453	St. Thomas	7,967	17,045
Burgessville	45	P.V.	Kitchener	25,745	35,456	Sarnia	11,040	18,599
Burlington	1,504	3,925	Lambeth	122	P.V.	Scarborough Twp.	4,485	V.A.
Burlington Beach	416	1,474	LaSalle	257	907	Seaforth	678	1,782
Caledonia	325	1,430	Leamington	1,846	6,048	Simcoe	2,469	6,340
Campbellville	37	P.V.	Listowel	1,402	2,984	Smithville	157	P.V.
Cayuga	125	700	London	39,393	77,105	Springfield	59	382
Chatham	6,554	17,184	London Twp.	630	V.A.	Stamford Twp.	2,896	8,275
Chippawa	338	1,228	Long Branch	1,215	4,258	Stoney Creek	250	933
Clifford	105	491	Lucan	182	643	Stouffville	276	1,198
Clinton	645	1,879	Lynden	109	P.V.	Stratford	7,274	17,163
Comber	147	P.V.	Markham	347	1,175	Strathroy	1,572	2,834
Cottam	74	P.V.	Merlin	90	P.V.	Streetsville	201	701
Courtright	48	355	Merritton	12,353	2,916	Sutton	191	949
Dashwood	106	P.V.	Milton	1,490	1,915	Swansea	3,053	6,907
Delaware	73	P.V.	Milverton	392	994	Tavistock	633	1,080
Delhi	418	2,430	Mimico	2,638	7,987	Tecumseh	526	2,331
Dorchester	124	P.V.	Mitchell	719	1,670	Thamesford	216	P.V.
Drayton	120	528	Moorefield	41	P.V.	Thamesville	219	816
Dresden	431	1,525	Mount Brydges	90	P.V.	Theford	116	598
Drumbo	108	P.V.	Newbury	30	288	Thorndale	82	P.V.
Dublin	38	P.V.	New Hamburg	578	1,441	Thorold	2,671	5,284
Dundas	3,146	5,245	Newmarket	1,734	3,800	Tilbury	1,469	1,923
Dunnville	1,294	3,916	New Toronto	11,818	9,469	Tillsonburg	1,241	4,602
Dutton	241	830	Niagara Falls	10,147	20,371	Toronto	346,370	657,612
East York Twp.	8,363	41,578	Niagara-on-the-Lake	817	1,764	Toronto Twp.	2,963	V.A.
Elmira	1,235	2,069	North York Twp.	11,121	V.A.	Wallaceburg	4,062	4,802
Elora	414	1,185	Norwich	439	1,301	Wardsville	37	221
Embro	158	420	Oil Springs	174	541	Waterdown	220	867
Erieau	88	281	Otterville	95	P.V.	Waterford	424	1,294
						Waterloo	5,407	8,968

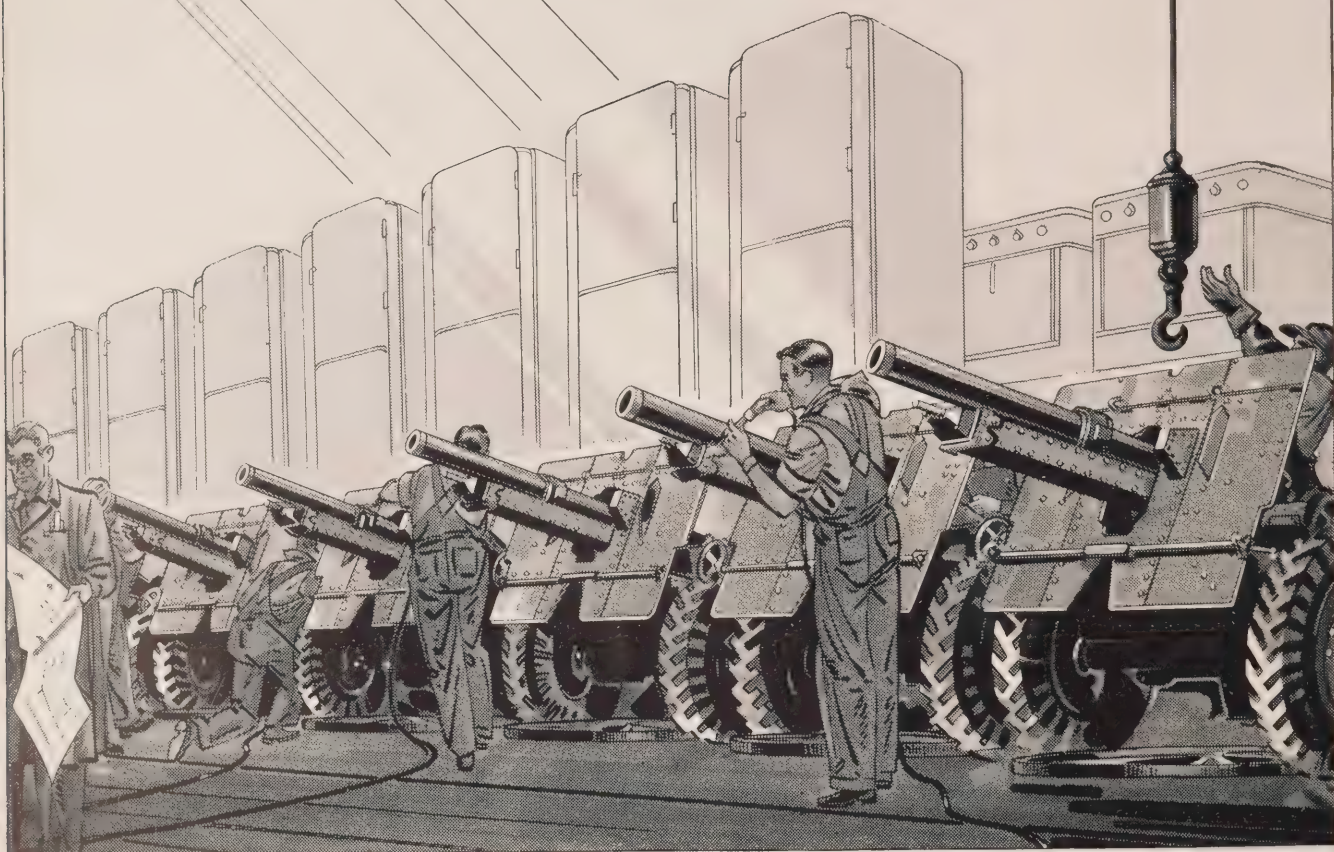


## MUNICIPAL LOADS, OCTOBER, 1943

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Watford	415	1,023	Neustadt	44	431	Lakefield	401	1,301
Welland	10,731	14,899	Orangeville	716	2,558	Lanark	77	686
Wellesley	111	P.V.	Owen Sound	5,832	13,559	Lancaster	44	570
West Lorne	230	768	Paisley	114	530	Lindsay	3,621	8,345
Weston	4,624	6,165	Penetanguishene	1,000	4,177	Madoc	190	1,130
Wheatley	181	761	Port Carling	125	520	Marmora	130	1,004
Windsor	51,009	104,415	Port Elgin	467	1,415	Martintown	37	P.V.
Woodbridge	610	946	Port McNicoll	88	950	Maxville	101	811
Woodstock	7,980	12,339	Port Perry	274	1,175	Millbrook	84	749
Wyoming	73	538	Priceville	10	P.V.	Morrisburg	266	1,484
York Twp.	20,561	77,175	Ripley	99	420	Napanee	1,373	3,241
Zurich	132	P.V.	Rosseau	45	305	Newcastle	155	701
(25 and 66-2/3 Cycle)			Shelburne	231	1,053	Norwood	124	710
Hamilton	151,792	164,719	Southampton	488	1,467	Omeme	153	630
St. Catharines	31,075	34,541	Stayner	279	1,106	Orono	95	P.V.
Trafalgar Twp.	512	V.A.	Sunderland	78	P.V.	Oshawa	17,915	26,610
(66-2/3 Cycle)			Tara	101	510	Ottawa	36,623	150,861
Bronte	178	P.V.	Teeswater	142	873	Perth	1,705	4,197
Oakville	1,021	3,369	Thornton	30	P.V.	Peterborough	12,012	24,977
GEORGIAN BAY SYSTEM			Tottenham	91	532	Pictou	1,204	3,400
(60-Cycle)			Uxbridge	329	1,480	Port Hope	2,376	4,997
Alliston	390	1,700	Victoria Harbour	61	979	Prescott	1,343	3,283
Arthur	153	1,089	Walkerton	966	2,534	Richmond	63	428
Bala	148	355	Waubushene	96	P.V.	Russell	68	P.V.
Barrie	3,816	9,559	Warton	272	1,750	Smiths Falls	2,739	7,741
Beaverton	235	941	Windermere	50	117	Stirling	277	947
Beeton	175	617	Wingham	689	2,149	Trenton	4,998	8,183
Bradford	157	1,041	Woodville	62	439	Tweed	213	1,181
Brechin	35	P.V.	EASTERN ONTARIO SYSTEM			Warkworth	69	P.V.
Cannington	167	761	(60-Cycle)			Wellington	293	948
Chatsworth	72	333	Alexandria	200	1,976	Westport	93	725
Chesley	500	1,812	Apple Hill	54	P.V.	Whitby	1,417	4,236
Coldwater	113	545	Arnprior	1,256	4,019	Williamsburg	87	P.V.
Collingwood	2,654	6,249	Athens	103	626	Winchester	333	1,017
Cookstown	76	P.V.	Bath	54	325	THUNDER BAY SYSTEM		
Creemore	129	661	Belleville	7,648	15,498	(60-Cycle)		
Dundalk	231	686	Bloomfield	124	636	Fort William	14,819	30,370
Durham	339	1,874	Bowmanville	2,587	3,850	Nipigon Twp.	245	V.A.
Elmvale	140	P.V.	Brighton	457	1,462	Port Arthur	20,953	24,217
Elmwood	60	P.V.	Brockville	4,667	10,576	NORTHERN ONTARIO		
Flesherton	64	452	Cardinal	285	1,602	PROPERTIES		
Grand Valley	143	645	Carleton Place	1,706	4,143	Nipissing District		
Gravenhurst	1,059	2,261	Chesterville	300	1,094	(60-Cycle)		
Hanover	1,349	3,190	Cobden	83	643	North Bay	4,724	16,013
Holstein	16	P.V.	Cobourg	2,171	5,907	Patricia District		
Huntsville	1,189	2,943	Colborne	212	960	(60-Cycle)		
Kincardine	692	2,483	Deseronto	224	1,002	Sioux Lookout	300	1,967
Kirkfield	25	P.V.	Finch	75	396	Sudbury District		
Lucknow	408	856	Frankford	144	1,095	(60-Cycle)		
Markdale	179	776	Hastings	113	823	Capreol	222	1,660
Meaford	695	2,759	Havelock	125	1,103	Sudbury	8,870	35,812
Midland	4,506	6,764	Iroquois	208	1,123			
Mildmay	125	764	Kemptville	361	1,230			
Mount Forest	471	1,936	Kingston	14,529	29,545			



# HYDRO Lightens the way



## Invisible Servant . . . in WAR . . . in PEACE!

● Silently . . . tirelessly . . . day and night . . . electricity serves, at the flip of a switch.

Throughout Ontario, Hydro power implements production miracles, keeps machines operating at maximum capacity.

Hydro, created and operated to supply adequate low-cost electricity to improve our way of living in normal times, has enabled Ontario's industries to meet the war emergency. In the race between production and disaster, Ontario and your Hydro have kept abreast of the war needs. It will be thus until the day of Victory. Then, Hydro's main effort will once again be directed to its peacetime service of helping industry produce the work-saving, time-saving, pleasure-giving conveniences that make for better living in the home and on the farm.

Meanwhile, the same determination of the people, the same qualities of courage, patience and self-discipline which created and expanded Hydro are still needed to see the war through. The Peace, so nearly won, must not be jeopardized by public complacency and over-confidence.

With our eyes fixed upon unconditional surrender of the enemy . . . let us go forward . . . willingly doing without when necessary . . . to bring victory sooner . . . to assure a lasting peace . . . when you may again enjoy a fuller use of Hydro . . . your invisible, low-cost, servant.

THE HYDRO-ELECTRIC  
POWER COMMISSION  
OF ONTARIO

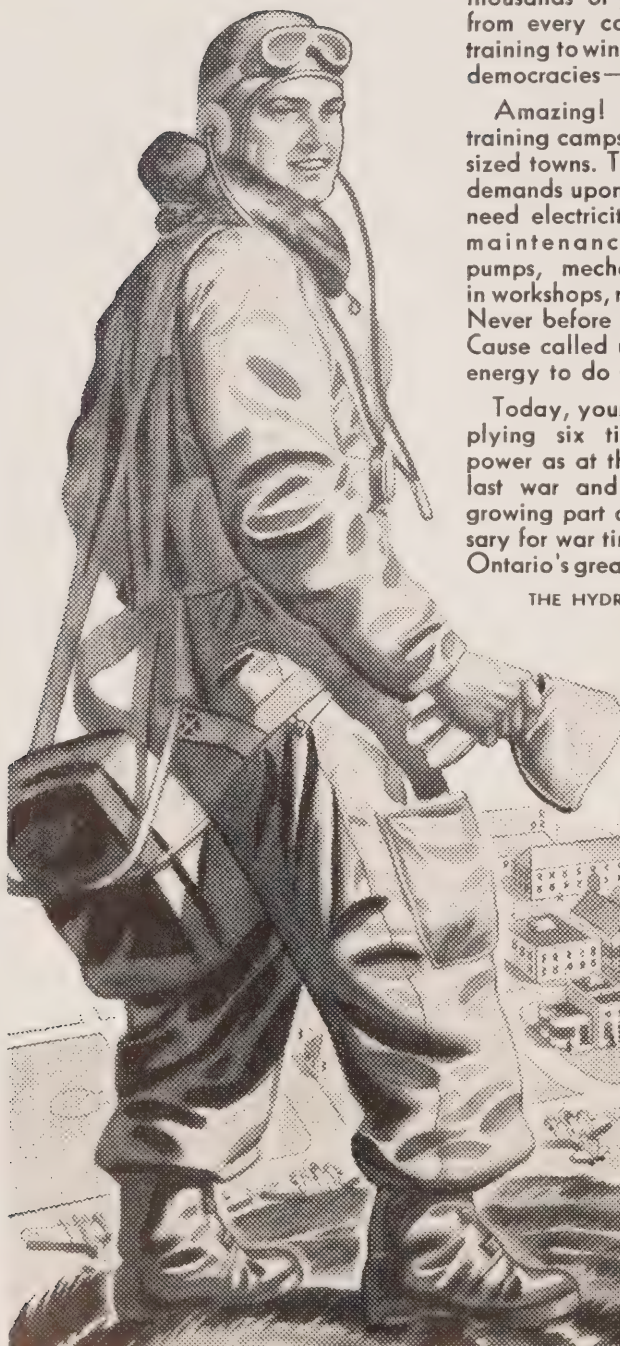


# HYDRO! News

**DANGER**  
**HIGH VOLTAGE**



# Victory IS IN THE MAKING AND **HYDRO** SPEEDS THE WORK!



● Right here in Ontario, thousands of young patriots from every continent are in training to win Victory for the democracies—from the Air!

Amazing! Some of our training camps are like good sized towns. They make new demands upon Hydro. They need electricity for lighting, maintenance, airfields, pumps, mechanisms, radio; in workshops, rooms, kitchens. Never before has so great a Cause called upon electrical energy to do so much.

Today, your Hydro is supplying six times as much power as at the close of the last war and a large and growing part of this is necessary for war time production. Ontario's great aircraft indus-

tries are powered by Hydro, also factories and foundries making all manner of military equipment. This war is not only mechanized but electrified!

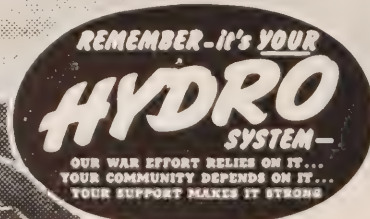
You are, of course, proud that your Hydro System is playing so great a part in the victory program. Of course, you will economize in your use of electric energy for all peace-time pursuits—and forego for a while further extensions of electric service. With all of us, war needs must come first!

#### Electrical Thrift Hints

Always use the heating element best suited to the work in hand. That saves current, prevents boil-overs. Use automatic controls as directed. Don't leave elements on 'high' a moment longer than necessary. Have your dealer or local 'Hydro' put your appliances in good order.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

**CANADA ASKS—"BUY MORE VICTORY BONDS"**  
Every Bond you buy, large or small, will be a pledge of your determination to back up our gallant fighting forces.







# HYDRO News



## THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

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HON. GEORGE H. CHALLIES, M.L.A.  
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### The Front Cover



**I**N making this month's front cover picture, Alan Walker, well-known Toronto photographer, captured something of the beauty and spidery pattern effect produced by an electrical arc during an insulator test in the H.E.P.C. laboratory. Before the test, all lights in the room were switched off and, in this tenebrific setting, the crackle of electricity and the ghostly waves of blinding light flashing along the test bar combined to create an awe-inspiring and arresting scene.

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February 1944

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# Bob GEMMELL



THEY call him "Bob" at the H.E.P.C. lab. If you want to be formal, however, he's Mr. Robert Gemmell.

"Bob" is a Scot—from Glasgow. But that's not his only noteworthy distinction. His skill as an electrical instrument maker has brought him recognition as one of the finest craftsmen at the job today.

Following his technical education in Scotland, Mr. Gemmell served his time with Alexander Dobbie and Sons and later with Kelvin and White of Glasgow, two world renowned electrical instrument makers. During his service with this company, he did experimental work for Lord Kelvin, working out many of the latter's ideas.

Mr. Gemmell, who came to Canada in 1910, was superintendent of a munitions' plant during the last war, and has been identified with the H.E.P.C. for nearly 20 years. But "Bob" is not only keen of eye and steady of hand; he is nimble on his feet and widely known among Toronto Scots for his interpretations of Scottish dances.

In the upper illustration Mr. Gemmell is shown pointing to an electrostatic voltmeter, which he made at the lab. many years ago and which makes it possible to determine the efficiency of certain types of electrical apparatus. In the lower photograph he is at work stringing a galvanometer with silver ribbon, which, he told Hydro News, is only seventy-five one-hundredth-thousandths of an inch thick and seven one-thousandths of an inch wide. In the background of this picture can be seen an old Kelvin balance, made by the firm with whom he served for nine years. Still in perfect condition, this instrument is now a prized museum piece at the lab.





## \* *Page Three* \*

### REPRESENTS CANADA

**O**F Canadian-wide interest was the recent announcement made in Washington that Dr. Thomas H. Hogg, chairman and chief engineer of The Hydro-Electric Power Commission of Ontario, had been named to represent Canada on the Public Utilities Committee of the United Nations.

Set up by the Combined Production and Resources Board, this three-man committee will act under the chairmanship of J. A. Krug, director of the Office of War Utilities in the United States, while Great Britain is represented by Lord Pentland, United Kingdom representative on the Combined Production and Resources Board.

This committee has been entrusted with the important task of considering the utility requirements of liberated areas in relation to military and civilian demands of the United Nations and to make recommendations involving the needs in its particular field.

Dr. Hogg's recognized knowledge and skill as an engineer and his extensive experience in the utility field as head of Ontario's great publicly-owned enterprise will be invaluable to the committee as it considers the many problems involved in meeting these vital requirements.

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### TOMORROW'S WORLD

**I**N time of war, with all the resources of science and industry marshalled in the national interest, the tempo of human progress is sharply accelerated. Designs and methods which, only a year or two ago, were considered the "last word" in various spheres of activity are now outmoded and are yielding to newer and more revolutionary advances. So far-reaching have these advances been during the present war that they have aroused the keenest anticipation and speculation concerning "Tomorrow's World."

At present, there is every indication that, eventually, many developments, brought about under pressure of war demands, will render valuable service in time of peace. New inventions and techniques will supplant

devices and methods used before the war. There is the expectation of striking advances in the fields of civil aviation, communications, travel, and commerce. Science, too, will play an increasingly important role in preparation of foods and in making available new comforts and conveniences in home and business life. Perhaps the most ambitious attainments will take place in the field of electricity, with the application of electronics to the needs of science, medicine, industry, public safety, agriculture and manufacturing. The achievements to date, as a result of electronic applications, have been literally amazing.

The role of electronics, particularly in time of war, and the potentialities for widespread application in the future, are indicated in the article entitled "A World of Wizardry," published in this issue of Hydro News.

★ ★ ★

### THE ANNUAL MEETINGS

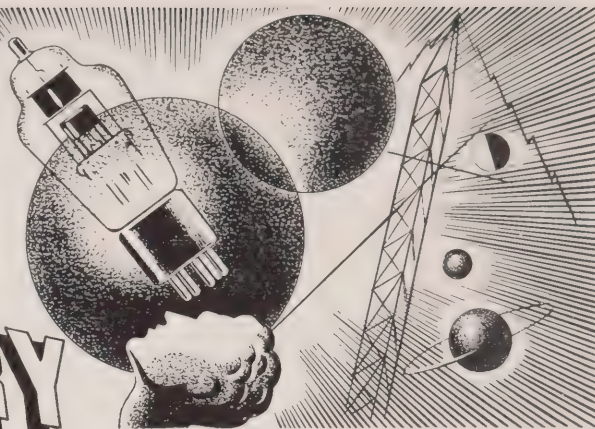
**O**NCE again, members of the Ontario Municipal Electric Association and of the Association of Municipal Electrical Utilities will meet in Toronto at the Royal York Hotel for their annual meetings which, this year, will be held on February 8 and 9.

The annual deliberations of these groups provide an opportunity for an exchange of views and the presentation of recommendations which are closely linked with the progress of Hydro throughout the province. From these meetings, over a period of many years, have emerged constructive resolutions which reflect the experience and considered judgment of the participating delegates.

This year, with post-war planning, electronics and other subjects of vital, general interest appearing on the agendas of the respective groups, the addresses, discussions and resolutions will be followed with keen interest.

As both the O.M.E.A., and A.M.E.U., delegates arrive in Toronto, to take part in these important sessions, they can be assured of receiving the same cordial and whole-hearted welcome as accorded in previous years.

# A WORLD OF WIZARDRY



**A** SINISTER figure sneaks quietly across the dark arsenal grounds. Lights are out. No one is watching. Deathly silence. Then, out of the night, comes a sudden alarm. A saboteur trapped—by electronics!

Amazing, perhaps, but no more startling than a boy and a girl dancing to the clear music of an orchestra three thousand miles away; or a biologist examining the delicate windpipe of the tiny mosquito larva, its image magnified 100,000 times! Electronics is pointing the way to new heights of human achievement.

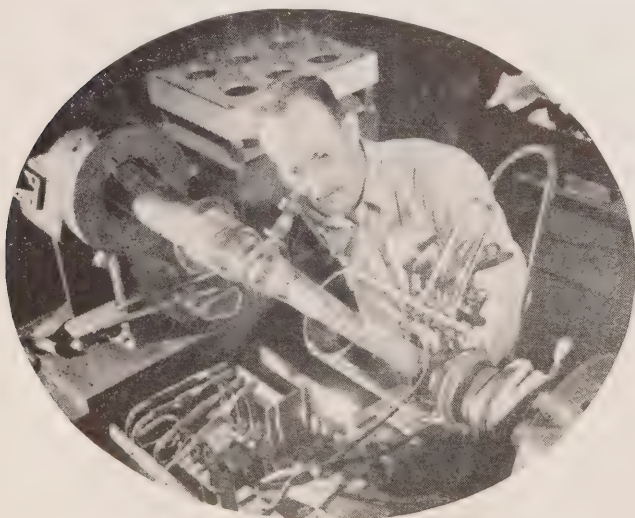
Today we are standing at the gateway to an astonishing realm, so fantastic and so limitless in possibilities that it staggers the imagination. The applications of electronics bid fair to dominate the entire post-war world, reaching into virtually every phase of human endeavour: science, medicine, industry, engineering, metallurgy, agriculture, crime detection, travel and communications. Research engineers predict that electronics will play an all-embracing role in that streamlined "world of tomorrow," which we have come to envisage as a sort of earthly paradise—a highly mechanized, scientific universe run by electricity, plastics, synthetics, television and the countless wonders of modern times.

We expect to see things we have never seen before; hear things we have never heard before; do things that, up until now, have seemed impossible. Actually, such things are more than the fabric of dreams. Electronics has already revealed some of Nature's most closely guarded secrets.

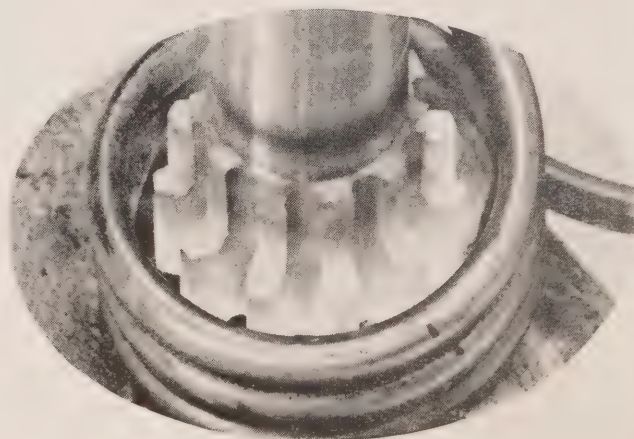
## Research on the Atom

Electronics is the science of the electron, a tiny, invisible particle of pure electricity that forms the basis of all familiar matter. The electron was the discovery of Sir J. J. Thomson, the great English physicist, who announced to the world in the year 1897 the results of his profound research on the atom. Science already knew that the world of matter was composed of molecules which, in turn, were composed of some 92 established elements or kinds of atoms. The question was, therefore: What is the atom made of?

Thomson said that the atom was made up of minute, unseen particles of electricity (now called electrons). Research, since that time, has revealed other constituents of the atom, chiefly neutrons and protons, clustered together in the nucleus, and around this nucleus revolve negatively charged electrons—revolving in much the same manner as the earth and planets revolve around the sun. But the key to the

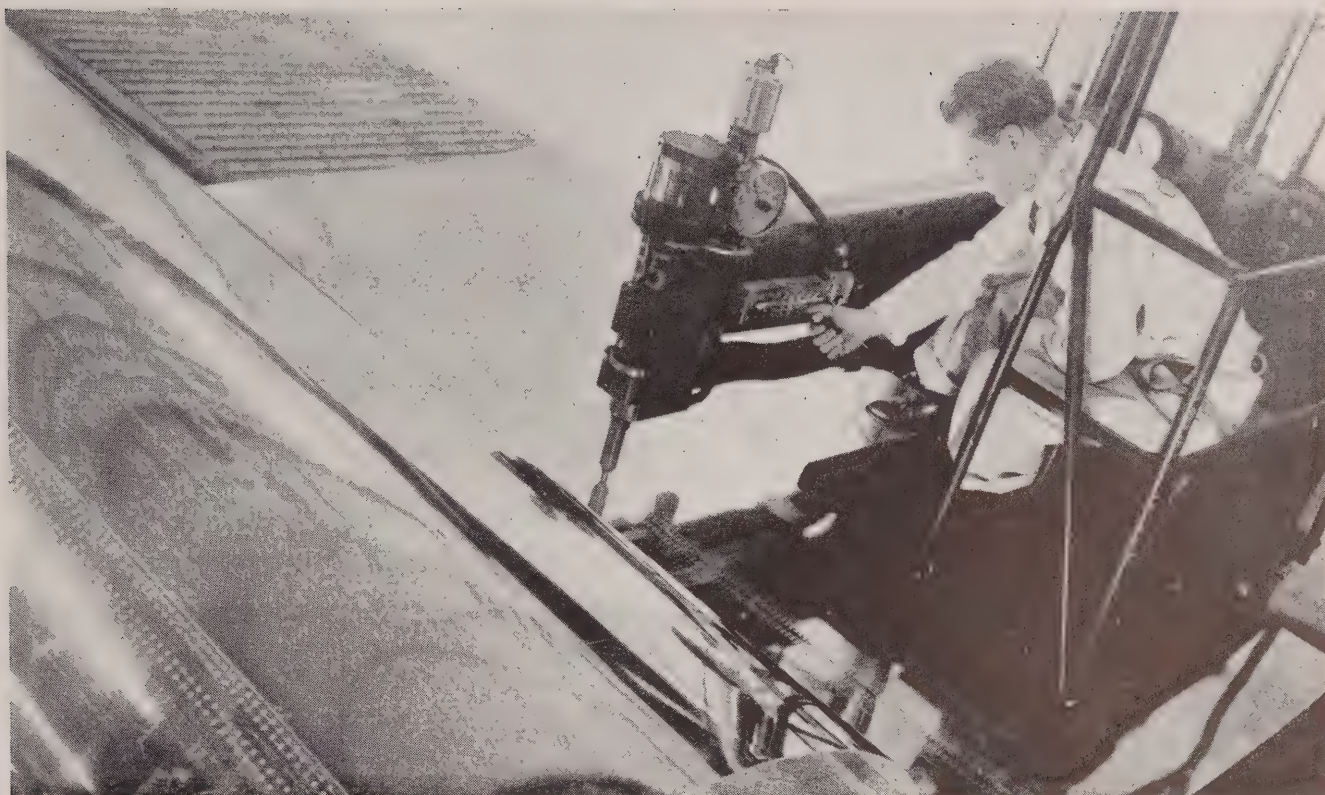


ELECTRONIC TUBE manufacture calls forth the resourcefulness of scientist, engineer and craftsman.



THE INDUCTION welding of steel cutting tools is performed expertly with the aid of electronics.





**HIGH-PRODUCTION** seam-welding of airplanes is made possible by electronic welding control.

science is that these whirling electrons can be isolated from the influence of the nucleus and made to serve human needs through the ingenious medium of the vacuum tube. Today, in all parts of the world, are hundreds of types of electronic tubes, ranging from small globes to long cylindrical tubes 25 feet tall, revolutionizing industrial practice, opening the way to new techniques, expanding the frontiers of science in all directions.

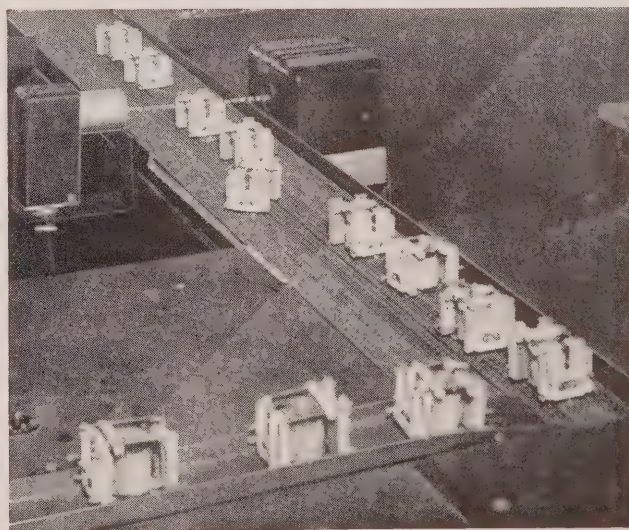
In time of war, electronics has found its way into arms production, railroading, steel mills, welding plants, research laboratories and other enterprises. On the fighting fronts electronic devices make it possible to detect planes many miles away, and to fire big guns with deadly accuracy. Likewise, important innovations have been made in military communication systems—in the “walkie-talkie” sets used by infantrymen; the compact two-way radios used in planes, tanks, trucks and other vehicles. The end of the war will doubtless bring to light many other contributions of electronics to modern warfare—secret uses which must, for the present, remain undisclosed.

A recording spectrophotometer, utilizing a photo-electric cell, provides an infallible method of analysing and matching colours. While the human eye is said to be capable of detecting ten thousand tints of reds, blues, greens, browns and yellows, the scientific apparatus defines two million different degrees of colour!

#### **A Versatile Servant**

In weaving mills an electronic device automatically squares the lengthwise and crosswise threads. Electronic

eyes examine rolling sheets of metal as they speed off the production line, spotting the smallest defects and marking them for discard. Electronic devices control the high-speed wrapping of packages; fill ginger ale bottles to a uniform level; turn on highway lights as darkness approaches and turn them off when morning comes; open doors automatically; count traffic in tunnels; control humidity and furnace temperatures; aid ships to dock; protect banks from hold-ups; inspect razor blades; reproduce news photographs



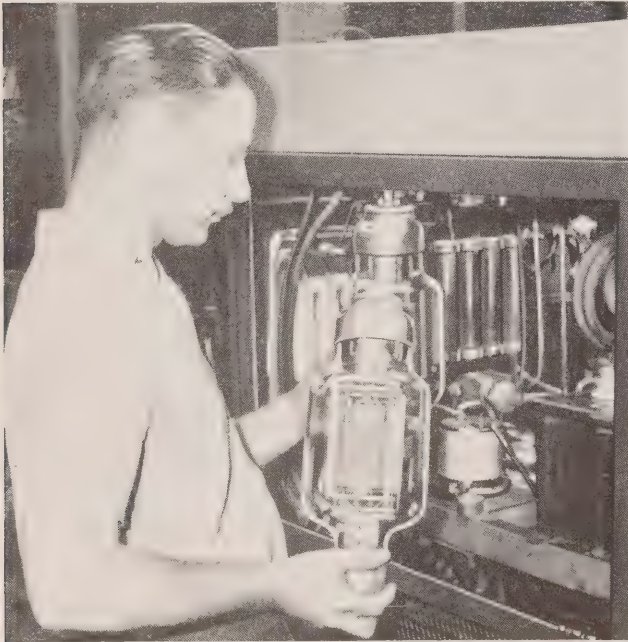
**KEEPING AN** accurate record of production, this electronic device counts finished assemblies on a conveyor belt.



by facsimile; sterilize foods; fill toothpaste tubes; and even match false teeth.

Electronic tubes also level elevators in skyscraper buildings; synchronize power circuits and, through carrier current, enable power station operators to carry on conversations over the same lines that carry the electric power.

Electronics came to the aid of power engineers who were seeking a device to "ride the line" so that emergency batteries, used in case of power failures, would remain fully charged. The solution was provided in the form of a phanotron tube in a completely automatic, self-regulating battery charger. Electronically controlled direct-current motors, operating from alternating-current power supply, are proving very valuable in rubber processing plants where continuous, automatic control is essential over a wide speed range. At one time plywood manufacturers had to keep sheets of finished material under pressure for several days while the glue dried. Today, assembly-line builders of military plywood gliders and cargo planes wrap thin layers



MANY TYPES of electronic tubes are manufactured for use in diversified industrial fields.

of wood around the mould and the plastic cement is dried in a few minutes by the heat induced by electronic oscillators.

Even the widely used X-ray has its origin in electronics. For many years an indispensable instrument of medical science, the X-ray now has extensive industrial application. A new million-volt unit photographs in 16 minutes the internal structure of heavy metal thicknesses which formerly required exposures of 60 hours. X-rays detect flaws in welded metal seams; examine oranges; check the contents of packaged goods; analyse metals, fibres and paints; and locate potential blow-outs in automobile tires. Of general interest to Canadians is the fact that North America's first electron microscope—a powerful machine which probes the

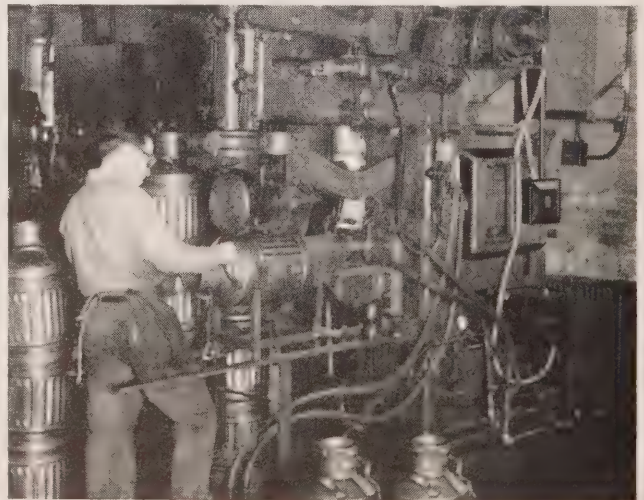
mysteries of an infinitesimal world—was constructed under the direction of Professor E. F. Burton, head of the Department of Physics at the University of Toronto.



THE ELECTRON microscope opens new windows on an infinitesimal world. The first electron microscope in North America was constructed under the direction of Professor E. F. Burton, head of the Department of Physics, University of Toronto.

Valuable life and thousands of dollars are saved annually by the alertness of electronic devices which guard war factories, shipyards and railroads; pierce fogs to aid aeronautics;

*(Continued on page 23)*



A TYPICAL electronic tube application is the seam welding of milk cans on a production basis.



# DOWN WINDSOR WAY

THIS IS the head office  
of the Windsor Utilities  
Commission.



**A**BOUT a year before the outbreak of the last war, Hydro in Windsor was restricted to the confines of a 12-foot square room equipped with a drafting table, a kitchen table, three kitchen chairs and a slide rule.

Into this room stepped a young electrical engineer by the name of Oliver Perry who had been entrusted with the job of inaugurating a publicly-owned Hydro system in that city. At that time, public ownership was in its

infancy and he could draw but little upon the experience of others in the operation of a "power at cost" electrical co-operative.

Rolling up his sleeves, Perry went to work and, gradually he gathered round him a group of men imbued with the same spirit of determination. Soon, the framework of a system was established and, a year later—in 1914—the late Sir Adam Beck pressed a button in the Windsor Armouries and Hydro power from Niagara Falls first went into service in Windsor. At that time, the commission comprised A. D. Bowlby, James H. Sheppard and mayor F. L. Howell.

## Progressed by Leaps and Bounds

From an initial load of 590 horsepower, the system developed by leaps and bounds and, for the next few years, the construction department was hard pressed to keep pace with the constantly increasing demand for service. Today, Hydro is the driving force behind Windsor's great industrial might and the load is now 51,500 horsepower, placing the city in the position of third ranking municipality in the province. There are now 26,754 domestic, 3,116 commercial and 495 industrial consumers in the Windsor area.

The dark days of the depression proved but a temporary set-back to the progress of the Hydro system, for the sound



THIS IS the accounting and power billing section of the Windsor Utilities Commission which is located 149 Chatham street.





IT WAS IN this building (left) the late O. M. Perry first opened an office when he came to Windsor in 1913. Later it was found necessary to move to the store shown on the right. The latter office also served as temporary quarters when fire destroyed the present site of the Windsor Hydro.

operating policies laid down in the formative years of the enterprise brought it through without impairment of financial stability or reduction in service to its customers.

In 1935 the city was largely expanded by the amalgamation of East Windsor, Walkerville, Windsor and Sandwich, into a single compact municipality stretching for six miles along the Canadian shore of the Detroit river. The attendant economies effected by the amalgamation of these several commissions under one management re-established the upward trend of power consumption and the downward trend of rates.

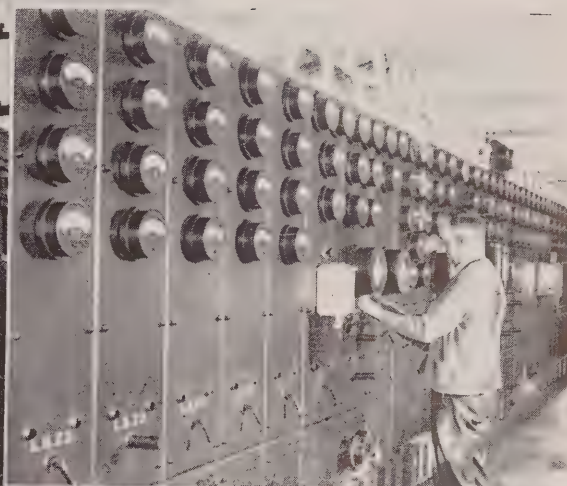
Speaking of the strides made by Hydro in Windsor, J. Clark Keith, general manager of the Windsor Utilities

Commission, with a chuckle brought out a copy of an editorial printed in a Western Ontario newspaper in 1908. The article ridiculed the idea that homes could be lighted with electricity, or that the housewife might cook, heat her iron, curling tongs, or use appliances which to-day are taken for granted by the modern housewife. The article also referred to Sir Adam Beck as a "monomaniac on the power question," and to his speeches as "Arabian Nights" rhetoric. "If one is to believe Mr. Beck, Niagara power is the gift of the fairies to the humblest, and free as the air, so that by and by the householder will merely press the button and the Beck scheme will do the rest," the article concluded.



ONE SECTION of the main office is shown at the left. Included in this illustration are the cashier's wickets and the credit and adjustment counter. On the right is another section of the main office, showing the appliance counter and the switchboard and information desk.





THIS IS the first sub-station acquired by the Windsor Utilities Commission. It is located on Erie street. On the right is shown the switch-board panel in that station. An operator checks one of the meters.

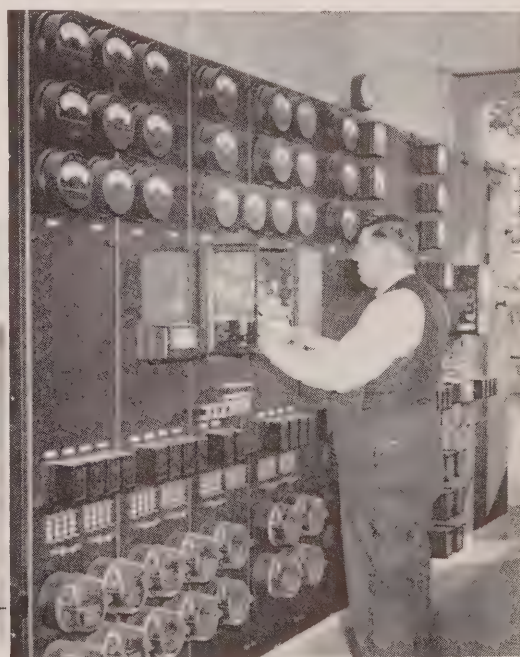
"I wonder what the writer of that editorial is thinking to-day?" mused Mr. Keith.

The debenture liability of the system in 1935, (the year of amalgamation) amounted to \$1,361,821 and at the end of the year just past it had been reduced to a little

more than \$400,000. Debenture payments are scheduled to cease in 1960 but, actually, the system will be free from debt in 1948 when a debenture payment of \$10,450 will

*(Continued on page 22)*

THIS IS the newest Windsor sub-station, located on Wyandotte street at Crawford street. The switch panel in this modern sub-station is portrayed on the right.







### **WINDSOR UTILITIES' CHAIRMAN**

Chairman **GORDON H. FULLER**, came to the Windsor Utilities Commission in 1942 as vice-chairman. Born and educated in Windsor, he went into business as a contractor and coal dealer.



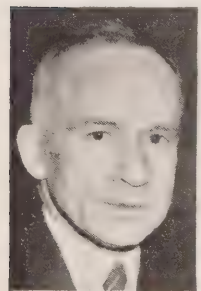
Taking a keen interest in municipal affairs, he was elected in 1928 to the Board of Education where he served until 1934, becoming chairman during his last term.

An active sports enthusiast, Mr. Fuller went to Berlin, Germany, in 1936, as coach with the Canadian Olympic Basket Ball team, which won second place in the World's Champion-

ship. He has also played on a number of baseball and basket ball teams.

### **MEET THE MANAGER**

**JOHN CLARK KEITH**, manager of the Windsor Utilities Commission, was born in Smiths Falls, where he received his early education, and after graduating from the Smiths Falls Collegiate Institute he attended the University of Toronto, graduating with honours as a civil engineer.



In 1935 he became general manager of the Windsor Utilities Commission and in 1941, following the death of O. M. Perry, he was named manager of the Hydro division.

Mr. Keith was chief engineer of the Essex Border Utilities Commission from 1921 to 1935, and was city comptroller in 1935 and 1936. From 1932 until 1936 he was business administrator of the Metropolitan General Hospital, and is still interested in hospitalization in Ontario. He is past president of the Ontario Hospital Association and vice-president of the Plan for Hospital Care.

Mr. Keith is a member of the Council for Professional Engineers of Ontario, a past president of the Canadian Section of the American Waterworks Association, and a director of the Windsor Elementary Flying Training School.

### **MEET GARNET A. EDWARDS**

**GARNET A. EDWARDS**, chairman of the Hydro Division of the Windsor Utilities Commission, who was born in Wheatley, Ontario, in 1886, has served on the commission for seven years, having been a commissioner for six years. In 1938 he was elected chairman of District No. 8 Ontario Municipal Electric Association, which office he held for five years.



His keen interest in municipal affairs is probably due to the fact that his family was one of the first to settle in the district. Mr. Edwards served on the city council as alderman for ten years, and was on the water board from 1930 to 1935.

Receiving his education in Windsor and Chatham, he later went into the building business.

Gardening and hunting are his favourite hobbies.

### **WINDSOR'S MAYOR**

Although only 37, Windsor's present mayor, **ARTHUR J. REAUME**, has a fine record of over 12 years' public service. Local Scots say this record is to be expected from a man who, like Prime Minister Winston Churchill, was born on St. Andrew's Day.



A native and life-long resident of Sandwich, Mr. Reaume first entered public life as an alderman in Sandwich in 1931. The following year he was elected as reeve, and in 1933, 1934 and 1935 he occupied the mayor's chair. In 1936, Mr. Reaume was elected to the Windsor council and from 1937 to 1940 he served on the Board of Control. Since 1941 he has been mayor of Windsor and has, therefore, served on the local utilities commission.

Mayor Reaume is keenly interested in sports and, according to reports, is quite at home on the gold course.



# AROUND THE HYDRO CIRCUIT

## WINDSOR COMMISSIONER

**WARREN PATTERSON BOLTON** is a native of Hamilton, and has lived in Windsor since 1912. Leaving high school to join the army in 1918, he was taken on the strength until the authorities discovered his age and discharged him.



While this is his first year on the local Hydro Commission he has given his time freely for community service, and in 1918 was assistant Scout master for the Windsor district. Being interested in youth and sport, he has managed and played on many senior, intermediate and junior football, softball and hockey teams in both Windsor and Detroit.

Mr. Bolton's hobbies are sports, hunting, fishing and the training, handling and showing of dogs. At the outbreak of the present war he became active in C.D.C. work, and was deputy controller of fire service for Windsor.

## H.E.P.C. TREASURER

**JOHN WALTERS**, who has been acting treasurer of The Hydro-Electric Power Commission of Ontario for the past year, has recently been appointed treasurer.

Mr. Walters, whose name is well known to Hydro personnel because it appears on all cheques, was born in London, England, and educated at Cranleigh School in Surrey. After considerable banking and commercial experience in London and the north of England he came to Canada for the Bank of Montreal, and was identified with the bank's head office in Montreal for thirteen years except for one year spent in the Maritimes. During this period he specialized in securities work, statistics and economics.



Mr. Walters is a Certificated Associate of the English Institute of Banks, a Fellow of the Canadian Bankers Association and an Associate of the Chartered Institute of Secretaries.

## LEAPS INTO ICY WATER RESCUES YOUNG CHILD

**L**EAPING into the icy water of Southside park pond at Woodstock recently, Harold R. Henderson, newly elected chairman of the local public utilities commission, rescued Barbara Atcheson, a 10-year-old girl from possible drowning.



Mr. Henderson was driving by the spot when he saw the child hanging on to a slab of ice where the freezing surface had broken under her weight. The utilities' chairman jumped on to the ice to break it up further and crashed through up to his chest. Grasping the girl, he lifted her as high as possible out of the water and was assisted to the bank by some soldiers who ran to the scene.

Although the temperature was 10 degrees above at the time, it was learned that neither Mr. Henderson nor the child suffered any ill effects.

## WINDSOR COMMISSIONER

**ALBERT J. BRIAN**, a native of Windsor, has served as vice-chairman of the Windsor Utilities Commission and last year as chairman of the Hydro Division.

He has served the people of his native city since 1933 when he was a member of the Windsor Water Commission. A sanitary engineer he operates his own plumbing and heating business in the city, and his hobbies are hunting, golfing and fishing.



## RE-ELECTED AT MEAFORD

Announcement has been made of the re-election of **E. N. COOPER** to the position of chairman of the Meaford Public Utilities Commission. Mr. Cooper has held this position since January, 1940.

**GEORGE C. E. GRANT**, who was also re-elected this year, has been identified with the Commission since January, 1925.



# *Time out for* **DINNER!**

**E**NDURING monuments of steel and stone bear mute but impressive testimony to the skill and labours of the men who sat down to dinner in the Top Hat Club, Toronto, on the evening of Monday, January 3.

At this event—the 13th annual dinner of the H.E.P.C. construction department—were men who do the actual building of the many types of projects which constitute Hydro's physical framework. They are the men who have helped create great dams whose massive walls and powerful hydraulic gates hold back and control vast reservoirs of water. They are the men who have erected great Hydro bulwarks on foundations of rock and stone to house giant, throbbing generators and speeding turbines. Some, too, have gone into the remote wilderness of Ontario's Northland to change the course of an onrushing river and the physical contours of Nature to accomplish the task of harnessing additional water power for Hydro.

The dinner—an important yearly event in the lives of Hydro construction men—climaxed the annual business meeting conducted in the Administration Building of the H.E.P.C. in Toronto. These sessions over, serious discussion gave way to matters of a lighter vein at the dinner where old friends met again to exchange reminiscences. It was an occasion when the noise of snorting bulldozers, the staccato clatter of electric drills and the way of life in a construction camp were replaced by new sounds and a way of life that was a little different. Sten-



AMONG THOSE identified in this group are Cecil Ramey, Chester Jones, Austin Huddleston, Ernest Nicholas, Grant McDougall, Denis J. Galligan, J. W. Lamb and Don Bray.

torian voices gave rousing renditions of old songs, while good-natured banter was heard on every hand.

At the dinner were Commissioner George H. Challies and the heads of H.E.P.C. departments by their presence or in words, paid tribute to the Hydro men of the great outdoors.

Introduced by David Forgan, construction engineer, who presided, Commissioner Challies congratulated the construction department upon its splendid reputation and fine work. He spoke of the 120-mile line between Port Arthur and Steep Rock which had been completed well ahead of

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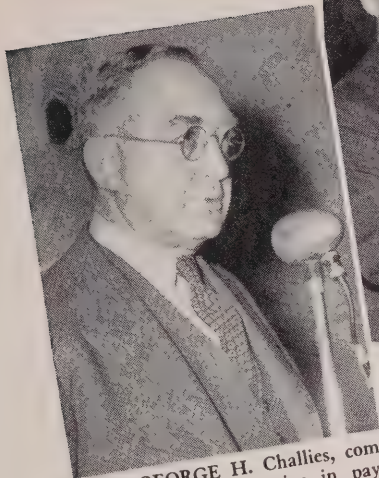


INCLUDED IN this group (left) are F. H. Chandler, Bobby Awde, Garth Dowling, E. O. Bright, Charles Campbell, Edward Davis, J. B. Daley, P. E. McGuinty, Warren Huston, Aubrey Langdon, G. A. Geddes, Reginald Ellis, Jack Denison and J. A. Blay.



THE BUSINESS of eating was nearing completion when the photographer caught this group, among whom are Bruce Platt, L. A. Catchpole, P. R. (Ronnie) Watson, George Page, R. C. Lane, G. J. Mickler, H. D. Rothwell and G. F. Drewry.





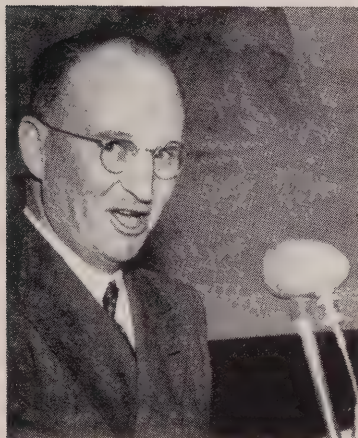
HON. GEORGE H. Challies, commissioner, H.E.P.C., joins in paying tribute to Hydro's construction men.



MELVILLE C. Hare, youngest member of the construction department, (right) to complete 30 years' service, received a pleasant surprise. He was the recipient of a handsome silver tray and nest of tables. William McKenzie is shown making the presentation.



THE PHOTOGRAPHER caught this interesting study of Herman Hyland as the latter was listening to an address.



JOHN DIBBLEE, assistant chief engineer, accepted the challenge when he was called upon to lead a vocal effort by the head table.



THIS TRIO really "went to town" when it came to blending their voices in song. From left to right they are: A. Hamilton, N. T. Scott and C. McPherson.



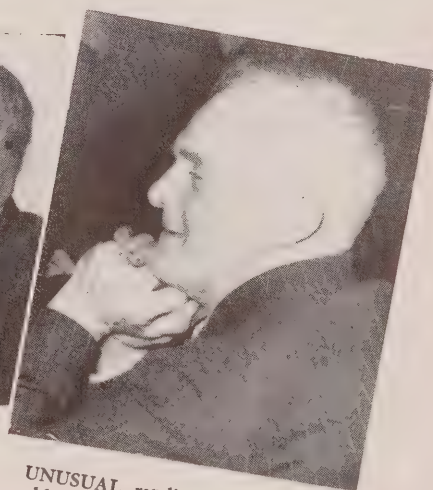
A DISTINCT Scottish accent could be detected quite frequently during the dinner. It came from Andrew T. Clark (above).



THROUGHOUT the proceedings were enlivened by the sparkle of humor. One of the contributors was Osborne Mitchell, secretary of the H.E.P.C. (above)



THE PHOTOGRAPHER saw this smiling trio and the shutter clicked. They are, from left to right, A. H. Frampton, W. J. Gilson and O. Titus.



UNUSUAL renditions of the very old songs aroused marked enthusiasm throughout the gathering, Fred Coyle (above), however, appeared to be in a reflective mood.





AT THIS section of the head table, from left to right, are David Forgan, Hon. George H. Challies, R. T. Jeffery, W. P. Dobson, M. J. McHenry, T. U. Fairlie, J. V. Walters and Dr. E. W. Bradwin, principal of The Frontier College.

*(Continued from page 12)*

schedule. "All one has to do is to visit DeCew Falls to see the splendid work which is being done by Hydro," said Mr. Challies, and he expressed the hope that work would be available on a much larger scale for the construction department.

In his address of welcome, Mr. Forgan said that since the last dinner of the department 6 of the 236 who had enlisted and four old timers, Micky Cleary, Bob Charbonneau, G. Hendricks and D. M. Johnston, had passed away.

Part of the value of these meetings, Mr. Forgan stated, lay in the contacts they could establish with others they only knew by name. He also spoke of the happy relations

existing between the construction department and other departments in the Commission and introduced many guests present, including John Dibblee, assistant chief engineer; R. T. Jeffrey, chief municipal engineer; Osborne Mitchell, secretary; R. L. Hearn, assistant to the chairman; Otto Holden, chief hydraulic engineer; A. H. Hull, chief electrical engineer; W. P. Dobson, chief testing engineer; M. J. McHenry, chief priorities officer; T. U. Fairlie, property department; J. V. Walters, treasurer; and Dr. E. W. Bradwin, Frontier College.

During the evening, Melville Hare, the youngest member of the construction department to complete 30 years of Hydro service, was the recipient of a handsome silver

*(Continued on page 19)*



THERE WAS an impressive representation at the head table. In this section are, from left to right, Theo. Parr, A. H. Hull, A. B. Copper, R. L. Hearn, Osborne Mitchell, Otto Holden, John Dibblee and David Forgan.



# How it HAPPENED!

By A. H. FRAMPTON

Assistant Electrical Engineer, H.E.P.C.

WHY 25 cycles?

This is a question which is frequently asked by John Public who is sometimes led to believe that the Commission's Niagara system stands alone among the large power systems of the continent in that it supplies electricity at this frequency.

It is asked by many people who find that the radio, electric clock and washing machine, which they used in a 60-cycle area, must be adjusted before being placed in service in a 25-cycle area.

"What," these people wonder, "do electricians mean by 25 and 60 cycles," and "why do we have 25 cycles in Southern Ontario?"

To answer these questions in a way which will be understood by the average layman, it is necessary to know something about the principles of electricity and the history of electrical development in this province.

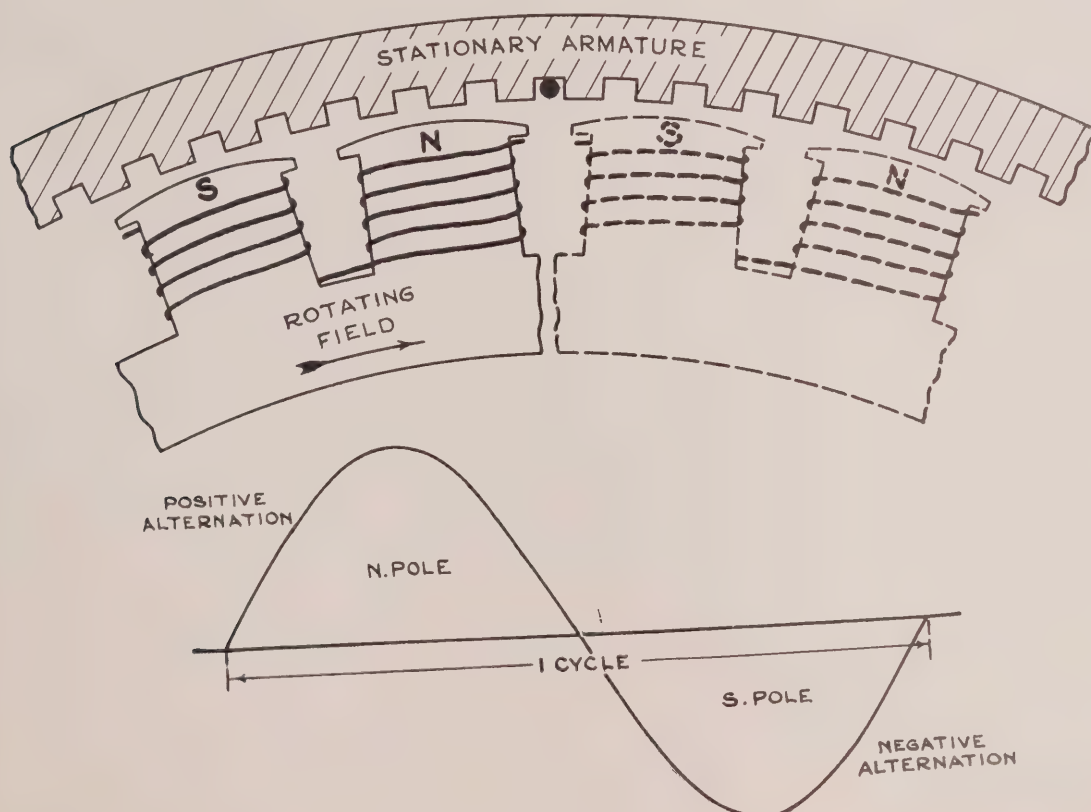
First of all the basic phenomena upon which the whole of our electrical way of living depends is termed "magnetic

induction," which simply means that if the face of the magnet is passed across a wire, an electric voltage will be generated or "induced" in the wire. In essence, even our largest electric generators are simply devices that pass tremendously powerful electro-magnets in front of a series of wires, thus converting the mechanical power of the water-wheel or steam-turbine into electrical power. The electro-magnets form the structure which we know as the "field" of the machine, the series of wires being wound on what is technically termed the "armature" or "stators".

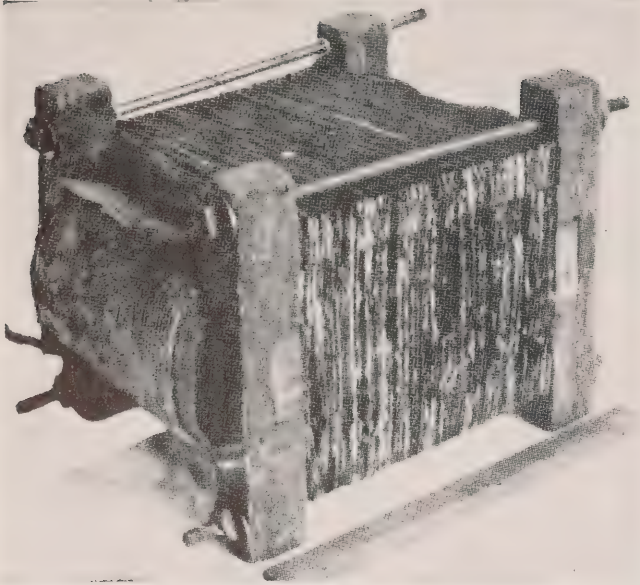
## North and South Poles

We know that a magnet must have both a north and a south pole, and so we find that the field of a generator is composed of alternate north and south poles. It so happens, that the electric voltage induced when we pass a north pole across a wire is in one direction, but in the opposite direction when the wire comes under the influence of a south pole. Therefore the voltages that are induced in the armature wires reverse in direction as first the north and then the south pole passes in front of them.

This wave we term a "cycle" and this cycle of voltage is generated every time a pair of poles passes in front of one of the armature conductors. If, therefore, the number of

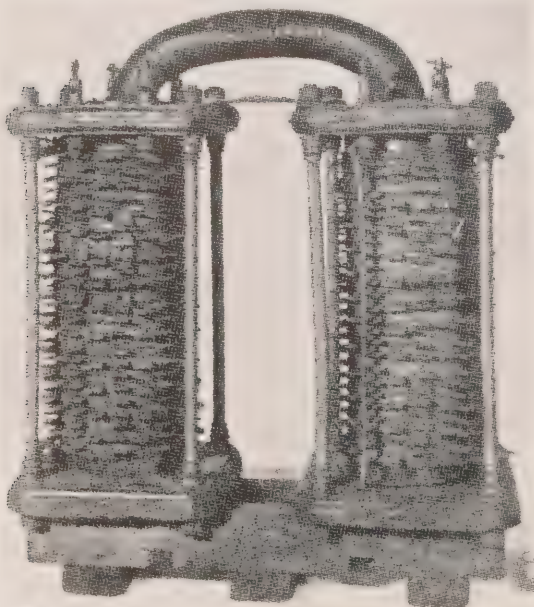


THE SOLID circle represents one of the armature conductors. As the field poles move from left to right, the voltage induced in this conductor follows the "sign wave" pole, each pair of poles inducing one complete cycle.



**THIS IS** one of the first transformers which was designed and built by William Stanley in the early 1880's. Wound for 500/100 volts, it is a prototype of all transformers built since that time.

poles on a generator and its speed of rotation are such that 25 pairs of north and south poles pass any one armature conductor in one second, 25 waves or cycles will be generated each second and the generator frequency will be said to be 25 cycles. If 60 pairs of poles pass a given conductor every second, the frequency will be 60 cycles and so on. For example, if we have a 40-pole generator, revolving at 190 revolutions per minute, i.e. 3 revolutions per second, then 20 pairs of poles would pass each armature conductor 3 times per second and the generator frequency would be 60 cycles.



**HERE IS** another early transformer. It was used by Gaulard and Gibbs in demonstrating their alternating current distribution system early in the 1880's.

But now how does this affect the frequency in Southern Ontario? To explain this, we must go right back to the beginning of the electrical industry. The earliest experimenters in electricity were familiar only with the various forms of batteries, from which constant-voltage or direct-current electricity is delivered. Electricity, therefore, found its first uses in processes which require direct-current, such as in electro-plating and in the reduction of certain metals. The pioneer types of electric generators were also direct-current machines, the commutator being devised to convert the alternating current generated in the armature conductors into a direct-current at the machine terminals.

It was not until the use of electrical illumination became well established, that the early counterpart of our modern alternating-current distribution system was developed, utilizing distribution voltages of the order of 2,200 volts and



**ILLUSTRATED HERE** is an entire picture of powerhouse No. 1 of the Niagara Falls Power Company. Among the units shown are those whose selection is described in the accompanying article.

the then entirely new transformer. Special steels for transformer cores were then unavailable and with tiny (by present standards) generators, the common frequency was  $133\frac{1}{3}$  cycles and all systems were two-wire or single-phase only.

## Built Canal From Upper Niagara

In those days, the use of electricity as a power source was virtually unknown, industry depending on the steam engine or the direct use of water power through the water wheel. In 1853, the Niagara Falls Hydraulic Power and Manufacturing Company undertook to build a canal from the upper Niagara River, to and along the face of the escarpment, from which customers would be permitted to divert water to drive their own water wheels. Financial problems and the intervention of the American Civil War delayed this project until the early 1870's when water was finally delivered to the company's customers.

It was not until 1881 that this company first generated electricity. In that year, some small arc-lighting machines were belted-up to the mill shafting in Quigley's mill (later the Cliff Paper Company) to provide store lighting and



street lighting service in Niagara Falls, N.Y. Later this company actually installed a number of small d.c. water-wheel generators in a powerhouse at the base of the escarpment, these generators each supplying a separate customer with power, almost exclusively for electro-chemical purposes. Incidentally, this powerhouse formed the beginning of this same company's giant Schoellkopf plant, now located on the same site, virtually under the shadow of the Rainbow Bridge.

During this period in the growth of industry in Ontario several ideas were advanced for the more general use of Niagara power for power purposes. One proposal was to drive air compressors and distribute compressed air over a wide area; another was to drive a long series of line shafting from which customers would derive power service.

#### Viewed Its Electric Power Source

In 1880, following the development of the induction motor, the two-phase and then the three-phase system of alternating-current generation and distribution were proposed. In 1889, the Westinghouse Company acquired the American rights to these two new developments, and industry, quick to realize the advantages, soon demanded—not only power service—but electric power service. For the next fifteen or twenty years Niagara Falls was viewed as an electric power source and, only incidentally, as supplying the lighting needs of the people.

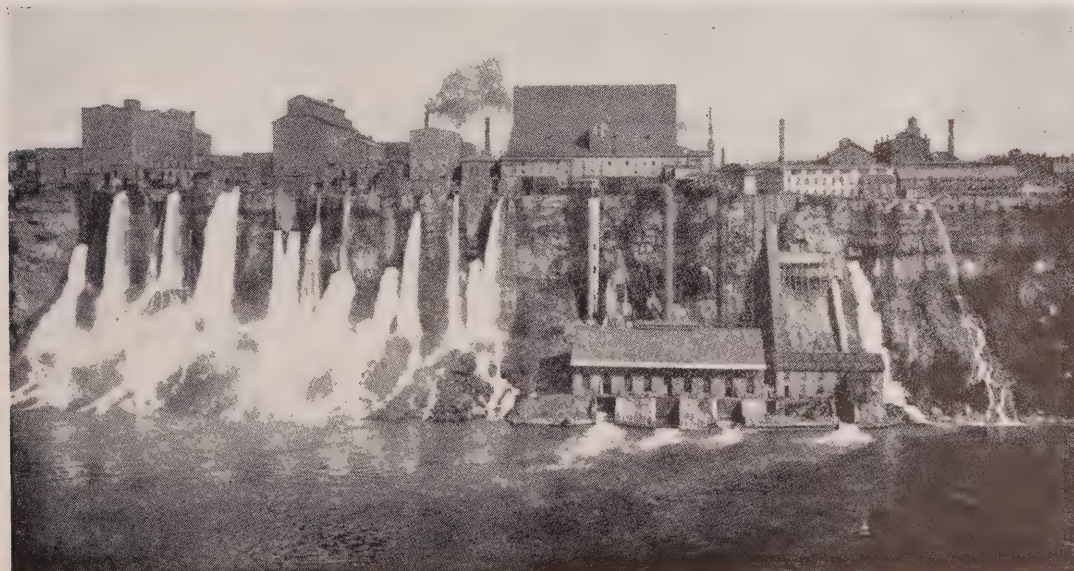
One writer, as late as 1905, discussing the earlier choice of frequency at Niagara Falls, is quoted as stating that the choice was admirable for power purposes and was made in preference to a higher frequency, because the lighting load would never be a large proportion of the total; in fact, he visualized that the only way in which Niagara power would be used for lighting would be in replacing the existing engines driving lighting generators, though it was considered that later it might be necessary to put in some generators of higher frequency. This conception of the use of electrical energy, so widely held when the first major electrical plant at Niagara Falls was designed and constructed, was to have an important bearing upon the selection of the alternating-current frequency.

The early frequency of  $133\frac{1}{3}$  cycles had been found quite satisfactory for small belt-driven generators, supplying electric lighting service only. When the induction motor and then the rotary-converter and the direct-connected engine-driven generator were introduced, each was found to operate better at lower frequencies. George Westinghouse, therefore, directed his research forces in a search for a new and more suitable frequency, with the result that about 1893 his company standardized, not on one, but on two frequencies—60 cycles was selected for small installations where lighting predominated, but 30 cycles was selected for large power installations, the engineers apparently concluding that at 60 cycles the problems of transmission and of conversion to direct-current in rotary-converters would be insurmountable.

During this period, when it was accepted that a relatively low frequency must be used for power purposes, the second great development company at Niagara Falls came into being, the first company to consider electrical generation only. The Niagara Falls Power Company, recognizing its responsibilities as a pioneer and considering the installation of the unbelievable total of 105,000 horsepower of new electrical capacity, employed a group of consulting engineers having international reputations, including Dr. Coleman Sellers and Professor Rowland of Johns Hopkins University and Professor George Forbes of England. Of these, Professor Forbes appears to have been the most prominent and he apparently first proposed a frequency of  $8\frac{1}{3}$  cycles. Later, as plans developed, these consultants recommended a frequency of  $16\frac{2}{3}$  cycles, the generators to be 5,000 horsepower 250 r.p.m.

#### Speed Fixed at 250 R.P.M.

The design originally proposed for these generators is interesting. They were to have had an internal stationary armature and an external revolving field. They were to have been 20,000 volt, two-phase units, with the armature coils cooled by forcing oil through their turns, at a pressure later calculated to be 400 lbs. per square inch. Engineers of the Westinghouse Company, called into consultation, condemned



THIS IS the earliest hydraulic and electrical power development at Niagara Falls. On the left is seen the water taken from the canal of the Niagara Falls Hydraulic Power and Manufacturing Company and used at only a fraction of the total head and on the earliest full head hydro-electric generating station.





THE ORIGINAL powerhouses of the Niagara Falls Power Company, in which the first 5,000-horsepower 25-cycle machines were installed in 1894-95, is shown here. It is of interest that, after having been closed down for some years, these plants are again being operated under the pressure of war demands.

this whole design and from this criticism apparently stemmed the request of the Cataract Construction Company (representing the Power company) that the Westinghouse Company submit a tender based on its own design—though, in the meantime, the turbines had been purchased and the speed fixed at 250 r.p.m.

In 1893, the Westinghouse Company submitted a proposal, based on the frequency nearest its own 30-cycle standard permitted by the 250 r.p.m. speed—namely  $33\frac{1}{3}$  cycles. There followed a long attempt to reach a compromise—as near the recommendations of the consultants as possible, but one on which the Westinghouse Company would be prepared to submit guarantees. After reaching what must have been a virtual impasse, it appears that, following a dinner conference in New York in October 1893, President Edward Dean Adams, of the Cataract Construction Company and Lewis B. Stillwell, engineer representing the Westinghouse Company in these negotiations, together agreed that the compromise frequency of 25 cycles would be acceptable.

The Westinghouse Company promptly accepted a contract for the first three 5,000 h.p., 25 cycle, 2-phase, 2,200 volt units, which were installed and tested by April 1895 and went into commercial service in the fall of that year. Thus was the frequency of 25 cycles first established.

#### Adopted Frequency of 25 Cycles

With the die cast, the Westinghouse Company dropped its 30 cycle standard, as the apparatus requirements associated with the Niagara Development required designs at 25 cycles. Attempts were made later by the General Electric Company to establish a compromise frequency of 40 cycles, but the competition of the growing use of 60 cycles and the establishment of 25 cycles at Niagara was too great. In the ten years between 1893 and 1903, all the large power plants at Niagara, except the Commission's Queens-

ton Development, were undertaken and all adopted the frequency of 25 cycles, firmly establishing this frequency in the Niagara area.

In Southern Ontario, therefore Hydro's early development was completely a part of the Niagara picture and thus was quite naturally at 25 cycles. In definite contrast to the picture in other countries, subsequent development has been completely based on hydro-electric generating sources, with associated long distances of power transmission. The problems involved in long distance transmission of power were quickly recognized but, unlike the problems of the induction motor and the rotary-converter, were not soon solved. As a matter of fact, as recently as 1919, the opinion was expressed in the publication of a prominent manufacturer that a 60 cycle frequency was considered feasible for transmission over a distance of from 200 to 250 miles, but beyond that lower frequencies, even 10 to 15 cycles, offered certain advantages. These distances, it will be noted, are well within established transmission distances in Ontario, particularly the Niagara System 220,000 volt lines and the lines from Niagara Falls to Windsor and also the Abitibi lines from the Canyon to Copper Cliff.

As a general statement therefore, it may be said that the long distances of power transmission and the retention of the 25 cycle frequency in Southern Ontario has gone hand in hand since the first conception of Hydro.

But now a few words as to 60 cycles. The 25 cycle frequency was selected at Niagara as a power frequency, best suited to the new polyphase induction motor, the new rotary-converter and for long distance transmission. The designers of electrical equipment apparently accepted as a challenge the conception that these new devices were unsuitable for any but the lower frequencies and concentrated on eliminating what were first thought to be vital defects in the 60 cycle apparatus.

*(Continued on page 20)*



## TIME OUT FOR DINNER

(Continued from page 14)

tray and nest of tables, William McKenzie making the presentation on behalf of Mr. Hare's colleagues. In addition, a scroll, beautifully designed by Harry Awde and bearing the names of associates in the field as well as at the head office, was presented to Mr. Hare.

John Dibblee, assistant chief engineer, who was the principal speaker of the evening, complimented the construction department on its work and mentioned some of the compliments that have come to the Commission on the



INCLUDED IN this impressive line-up are G. F. Drewry, H. D. Rothwell, Joe Crombie, William DeRue, E. R. Knowlton, G. C. Thomas, Clarence Sharpe, J. C. MacLellan, G. C. Walker and Alan Fowler.

Steep Rock project. The Steep Rock Iron Mines Limited have been very appreciative and impressed by the work of the Hydro Commission in completing the construction of the new transmission line ahead of schedule. "I think a word of commendation and compliment to Mr. Forgan, Mr. Hull and the engineering and construction staffs is in order," he stated. "That was quite an achievement to build a line, over 120 miles, through rough country when there is a shortage of equipment and a



VERY MUCH in the picture, too, were Jack Ryder, George Adlam, E. M. Smith, Cecil Martin, W. J. Rennie, Wilson Berry, Herman Hyland, William Powley, H. E. Brandon, R. S. Duncan, George Emery, George Marley, J. C. Daley and Larry Fellman.

## ALL HYDRO MUNICIPALITIES URGED TO JOIN O.M.E.A.

Members of municipalities which are not members of the O.M.E.A. are reminded by A. G. Jennings, chairman of the membership committee, that application forms and fees should be forwarded to Miss K. Ciceri, secretary-treasurer of the O.M.E.A. as quickly as possible.

"To facilitate the operation of Hydro in the different municipalities and solve problems common to all, the Ontario Municipal Electric Association was formed and at the present time 202 of the 321 municipalities are members of this association," stated Mr. Jennings.

"In order to deal more effectively with matters pertaining to operation, the municipalities were organized into zones, each zone having its own organization and the president of each zone acting as a vice-president of the O.M.E.A.," he continued. "This has proven very satisfactory enabling municipalities to deal with matters affecting their section of the province, and to present their problems to the main executive committee of the O.M.E.A. who, in turn, present them to the annual meeting."

Mr. Jennings pointed out that each Hydro municipality has an equity in the general distribution system of The Hydro-Electric Power Commission and that it was in the interests of each local system and of Hydro in general to be a member.

"Hydro has played a most important part in war production and will continue to do so during the post-war period," he said. "It may be that the post-war period will require even greater effort and, for that reason, your membership committee hopes that by the end of the year 1944 every municipality will be a member of the O.M.E.A."

severe shortage of manpower and to get that line into service before the company got their end of the work finished so that they were ready to receive power."

In passing on to general present day conditions, Mr. Dibblee said, "In these confusing times, it seems to me, that almost every large organization has suffered some loss of morale. I am convinced that all of us in Hydro have a great opportunity. We can start the job of citizen building right here in Hydro. We do not need any society or officers or membership dues. We can just ask ourselves the simple question, 'what are we working for?' The spirit of loyalty and true teamwork cannot be had just for the asking. In achieving this spirit of team work we will be rendering a public service that is almost beyond price, not merely in the field of power supply but also in the large and wider sphere of human service."

In concluding, he said, "We have all felt keenly the loss of D. M. Johnson, a man who was respected, trusted and loved, not only in the construction department, but by everybody who knew him. No more solid citizen served this Commission in any capacity than D.M. Would it not be a great step forward in the job of citizen-building if those of us who needed it most could catch a little something of the spirit of D. M. Johnson, put that spirit into practice and see it marching on in Hydro?"





says  
Percy Parsnip

Hey!!  
Victory gardeners  
On your toes..

## HERE'S THE LINE-UP FOR 1944

KENB.

**O**RCHIDS to last year's committees for a very successful season! The horticultural club is fortunate in retaining most of these members for the 1944 campaign. Victory gardeners can, therefore, be assured of experienced and capable leadership. The rest is up to you.

\* \* \*

The following points should be given your immediate attention. It is important that you reserve your garden plot now and make arrangements for ploughing. Seed potatoes and some seeds will be scarce this year, so order immediately. For the convenience of club members, arrangements have been made again for the purchase of seeds, fertilizers and other supplies. Order forms may be secured from H. R. Hill, the secretary, room 1102.

\* \* \*

More than ever victory garden products will be needed this year. Your ideas or suggestions will be welcomed by the committee. Forward them at once to the secretary.

"Let's all get together and plan our work, then work our plan," is the sound advice of PERCY PARSNIP.

\* \* \*

Here's a reminder as to who's who in the horticultural club and on the victory garden committee. The club officers are: president, A. B. HAYMAN; vice-president, J. J. TRAIL; secretary, H. R. HILL; treasurer, ELIZABETH M. GRADER; directors: W. H. CARR (ex officio); J. F. MacLAREN, A. W. SMITH, E. V. BUTT, A. H. SHARPE, EDITHEMMA MUIR and ETTA JOHNSON.

Victory garden committee: chairman, A. H. SHARPE; garden culture; A. H. SHARPE; canning and storage, EDITHEMMA MUIR; garden allotment and ploughing, E. V. BUTT; registration, J. J. TRAIL; publicity, K. J. BROWN; purchasing agent, H. R. HILL, room 1102.

\* \* \*

Here are a couple of dates Hydro Victory gardeners should mark on their pads. On February 24 and 25 the Ontario Horticultural Association will conduct sessions in the King Edward Hotel. A. H. Sharpe has been invited to deliver an address, Hydro's Victory Garden set-up, which has been acclaimed as one of the finest in Canada. At this meeting, Eithemma Muir, Hydro Home Economist, will have something to say along the lines of "Can-Can" as it applies to fruits and vegetables and will have some exhibits on display. Other Hydro delegates to these sessions are A. B. Hayman, William Carr, H. R. Hill and Elizabeth Grader. All Victory gardeners who attend will hear instructive addresses from noted authorities.

## HOW IT HAPPENED

(Continued from page 18)

Their efforts were materially assisted at the turn of the century, by the introduction of the turbine-driven electric generator. It was soon demonstrated that the major difficulty lay, not so much in the apparatus itself, as in the fact that electric service was so largely dependent upon steam engine-driven generators having very poor speed regulation. Courageous designers offered equipment utilizing new materials at higher electrical and mechanical stresses, which, applied in systems having the advantages of the smooth, simple speed regulation of the steam-turbine, soon demonstrated that 60 cycle equipment could meet the challenge of 25 cycles in all but certain special cases, as for example, in very large, slow speed motor applications where even to-day 25 cycles is sometimes preferred.

In conclusion, it may be debated that the choice of 25 and 60 cycles was unfortunate; 30 and 60 cycles, or even 25 and 50 might have been better. Certainly frequency-changer installations would have been simplified by a one or two ratio. Perhaps it would have been best had the General Electric Company succeeded in establishing the compromise frequency of 40 cycles, which might easily have happened but for the decisions reached at Niagara Falls. However, we have the present frequencies with us and undoubtedly the various problems still act as a spur to the different components of our industry, from which, with our dawning concept of a post-war world, may yet spring developments as yet only dreamed.

## G. J. MICKLER'S FATHER PASSES

A native and life-long resident of Preston, where he helped pioneer the furniture manufacturing industry, Jacob Mickler, father of George J. Mickler, H.E.P.C. budget department, died recently in his 87th year.

The late Mr. Mickler, who was originally a cabinet maker, was also widely known as an architect. He took a keen interest in public affairs, and was chairman of the Preston Water and Light Commission for a number of years prior to the inception of Hydro, and he designed and built the present municipal substation. He was also a member of the school board and parks board.

## STANLEY HEYWOOD IN HOSPITAL

Petty Officer Stanley Heywood, R.C.N., formerly of the H.E.P.C. accounting department, is at present in the Royal Canadian Naval hospital at Halifax, N.S., where his left hand was amputated at the wrist.

In a cheerful letter to Thomas McFadyen of the power billing section, Stan in speaking about the accident, says, "It certainly sounds bad at first, but there is so much they can do now for such a handicap. It is pretty well on the way to being healed now and is just a matter of a little time. After that I will be coming home for a bit of leave."

P.O. Heywood enlisted in August, 1940.





“**H**OLD that line!”, the cry of the sports field, has its counterpart in the kitchen, where “Hold those food values!” is a wise exhortation. The three elements of strategy in this case are careful electric refrigeration, intelligent storage, and proper cooking methods.

Attention to these fundamentals will enable us to derive the maximum health values from various foods, and in these days, when many essential commodities are rationed or in short supply, careful management of foods from the grocer's shop to the dining room table is doubly important.

### Milk

All fresh milk and its products should be refrigerated to retard the growth of bacteria and preserve flavours. Canned milk should be treated similarly, after it has been opened. And protective coverings say “keep out” to any permeating odours.

There is little difference in values whether milk is served hot or cold as a beverage or in food, alone or as a supplement to other foods, as with cereals and fruits. Buttermilk, skim milk and chocolate milk offer most of the whole-milk values except butter fat and the vitamin A it carries. When butter is scarce, other foods rich in vitamin A, not necessarily fats, should be included. Among these foods one green or yellow raw vegetable and liver.

These should be given the shortest possible cooking so as to retain their vitamin B1. Therefore, the old overnight or three-hour boiling of porridge is “out” . . . (besides, it's too early to get up).

Store cereals, especially raw grains, in a cool place. Serve whole or rich milk very generously with cereals, giving added value to breakfast items, whether hot-cooked or ready-to-serve.

### Bread and Other Cereal Products

Canada Approved breads, brown or white, are of special value because of their higher content of the B vitamins. If bread is sliced very thinly and toasted, it can lose up to 100% of its B1 value. This loss can be reduced 25% by slicing bread at about the average thickness. The other B vitamins are not affected by toasting, and digestibility is increased if the toast is not too heavily buttered.

Store bread in a ventilated bread-box and no values will be lost. Grains rich in vitamin B are best used in yeast breads and next best in quick-baking soft doughs, such as dumplings; tea biscuits, scones and muffins. Large loaves not of the yeast type may lose a large percentage of their vitamin B1, but niacin and minerals are unaffected.

If meats are roasted or pot-roasted at low temperatures, there is less shrinkage and more of the values are retained. Low heat also helps tender cuts to remain tender. Long gentle cooking in liquid, which is necessary for less tender cuts, draws out important vitamins and minerals, but fortunately most of these values are held in the good gravy retained by using a tight-fitting cover. The short time required for broiling and frying at regulated high temperatures (a feature of electric ranges, incidentally) compensates for extreme heat.

Refrigerate all meats. Remove the paper wrappings from raw meat, place the meat in a glass or enamel utensil with a piece of waxed paper over it, and store below the freezing unit of the electric refrigerators.

### Fish

Fish is the only high-protein food for which fast cooking is advised. But, do not overcook. Cooking fish, with seasonings, in wet cooking parchment keeps all juices intact as well as preventing evaporation. The juice may be thickened for sauce.

Refrigerate fish, closely wrapped in waxed paper. Fish will spoil easily and, as you know, the flavour permeates quickly. It is not necessary to thaw frozen filleted fish; i.e., ready-to-cook fish.

### Cheese and Eggs

Cheese and eggs need low-temperature cooking for the least possible time to obtain maximum digestibility and enjoyment. Never literally “boil” an egg—cook it below the boiling point. Oven-cook egg and cheese dishes by setting dish in a container, with hot water in it, to a depth of about two inches, if placed on the lower shelf of the electric oven.

Refrigerate eggs, but do not wash. They need not be covered unless broken.

### Fruits and Vegetables

Fruits and vegetables should be stored to conserve values. Vitamins and minerals are most abundant when the just-matured product has been freshly gathered, then gradual loss of vitamins ensues—its speed controlled by treatment. The lowest feasible temperature helps to retain freshness.

Refrigerate cleaned and trimmed leafy vegetables, salad ingredients, and most fruits in a covered utensil in the lower part of the electric refrigerator. Do not pack, but allow circulation of air.

In cooking vegetables and fruits, much can be done to retain food values. If they are fresh, cook in skins where possible, whether you dry-bake, bake covered with added liquid, or steam the product. This is especially advisable in small households.

Other desirable cooking habits are to start vegetables with hot water. Use a small amount of water, a saucepan with a tight-fitting cover, and add *no* soda to raw vegetables. Fine cutting allows values to escape, although this is counterbalanced by the shorter cooking time and makes for greater variety. The liquid of all vegetables, except greens, should be used.

## DOWN WINDSOR WAY

(Continued from page 9)

be made out of a special sinking fund created to retire a 40 year debenture in 20 years. The system has borrowed no money since amalgamation and the increase in plant assets of approximately \$1,000,000 has been paid out of current revenue.

An effective voluntary effort on the part of Windsor citizens has resulted in an important saving of power for war industry. Street lighting was cut 20 per cent, and commercial lighting 2,700 horsepower or five per cent of the total power billed. Because of a great influx of commercial users, who have come to the municipality to man the war plants, there has been an increase in domestic lighting load. This is readily understandable when it is pointed out that population of the city, which was 103,644 in 1939, increased to 118,040 in 1943. In addition to the natural increase in the number of homes, Wartime Housing constructed 2,050 dwellings and still this has not been sufficient to take care of the great number of war workers who are seeking accommodation in the district.

It is interesting to recall that this busy mecca of industry was once inhabited by neutral indians who were exterminated by the Iroquois in 1650. Historical records also reveal that Father Brebeuf and Father Chaumonot were the first white men to come to the district, and in 1701 Cadillac established Fort Ponchartrain, now the city of Detroit.

### Centre of Transportation

During the war of 1812 the Americans under Brigadier-General Hull landed where the Ford Motor plant now stands and made his headquarters at the Baby House in Sandwich. General Sir Isaac Brook, marching up from Amherstburg crossed the Detroit River just above the River Rouge and General Hull surrendered Detroit without a single shot being fired.

The city of Windsor has always been a centre of transportation, and in 1828 the first stage coach began operating between Windsor and Buffalo and the Great Western, the first railway followed the same route in 1834. It has also been one of the great ports of entry between the United States and Canada and traffic has been facilitated by the Ambassador Bridge and the Detroit-Windsor tunnel.

The city has a province-wide reputation for the excellence of its schools, and claims the distinction of having inaugurated the rotary system of teaching.

The Hydro system in Windsor has endeavoured to combine utility with beauty and, among the municipalities of Ontario, the city claims to have the greatest number of miles of ornamental street lighting constructed as local improvements.

The destiny of Hydro in Windsor is now under the competent direction of A. J. Brian, chairman of the public utilities commission; Gordon H. Fuller, chairman of the Hydro division; Garnet A. Edwards and Warren P. Bolton, commissioners, and mayor A. J. Reaume, while J. Clark Keith, is the manager.

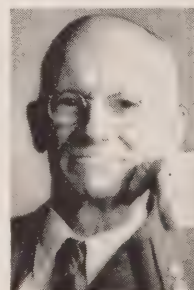


"I think Wilkins is trying to suggest that our lighting is a little antiquated, Mr. Peabody."

### HIGH TRIBUTE IS PAID TO LATE D. M. JOHNSON

WITH the recent passing of D. M. Johnson death has removed all of the three originals who came together to form the H.E.P.C. construction department in 1917.

This fact was mentioned by David Forgan, construction engineer, when speaking at the annual dinner of the department. After paying tribute to the memory of these three men—E. F. Latimer, A. V. Trimble and Mr. Johnson—Mr. Forgan recalled that the latter had joined the Commission staff in 1910 and had retired in 1935.



A special reference to the D. M. JOHNSON late Mr. Johnson was made by John Dibblee, assistant chief engineer, H.E.P.C., who remarked, "He was a man who was respected, trusted and loved, not only in the construction department, but by everybody who knew him."

### ANNUAL DANCE ANNOUNCED

In announcing the date of the 22nd annual dance of the Ontario Hydro-Electric Club for March 3, 1944, F. B. Pope, chairman of the dance committee, called attention to the fact that it would be held at the Club Top Hat this year. Mr. Pope said that the change in venue was due to wartime conditions and also pointed out that it would be informal in character.

Proceeds from the dance will be turned over to the Consolidated War Fund. Other members of the committee are Jean Fisher, Marion Corby, R. E. Taylor, and W. V. Morris.



## DECEMBER LOAD SUMMARY

A total primary load of 2,369,420 horsepower was supplied by The Hydro-Electric Power Commission of Ontario during December, 1943, an increase of approximately 94,000 horsepower or 4 per cent. over the corresponding month of 1942. During the same period combined primary and secondary loads supplied reached 2,466,290 horsepower, an increase of 3.4 per cent.

The Commission's monthly load summary covers all four H.E.P.C. systems and the Northern Ontario Properties.

### PRIMARY AND SECONDARY LOADS

	Maximum 20-Min. Dec., 1943	Peak H.P. Dec., 1942	Per Cent. Increase
Niagara System	1,875,737	1,762,869	6.4
Georgian Bay System	51,173	47,288	8.2
Eastern Ontario System	206,845	183,039	13.0
Thunder Bay System	119,437	120,643	- 1.0
Northern Ontario Properties	213,098	270,084	-21.1
Total of All Systems	2,466,290	2,383,923	3.4

## WORLD OF WIZARDRY

(Continued from page 6)

assist the forces of law and order through two-way radio equipment in police cars; and fight fires automatically.

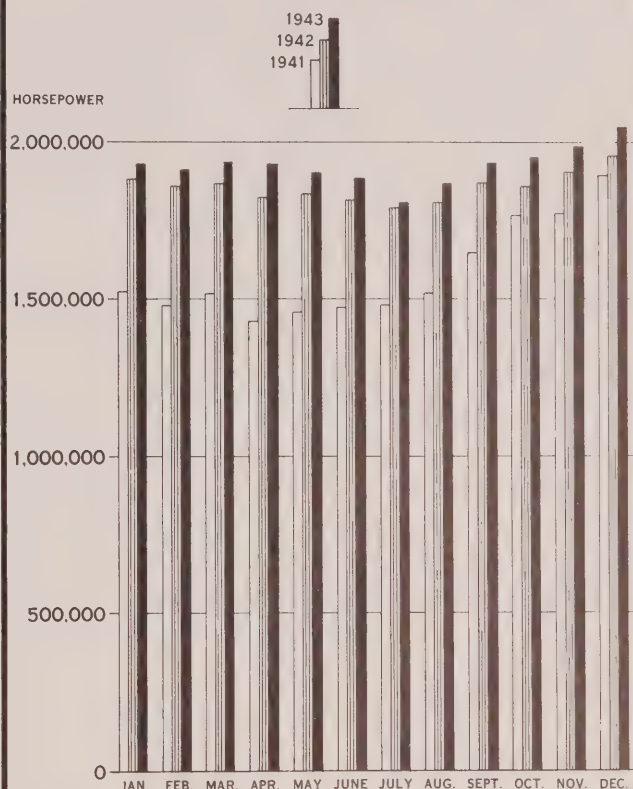
Already many railroad trains are equipped with devices which make head-on or rear-end collisions impossible as they automatically shut off power and apply brakes when danger is still far beyond the vision of the engineer. The motorist will be further protected by electronically-operated guard gates at railway crossings; by devices that cut down the glare of headlights from oncoming automobiles. The private garage of the future will unlock and throw open its doors as the motorist turns into the driveway.

New vistas are appearing with the experimental application of electronics to agriculture. The genetic effect of X-rays on seeds has resulted in the creation of new strains of flowers, and scientists have bombarded apple and other fruit trees, berry bushes, tomato seeds and string beans with 1,000,000-volt X-rays. Science holds out the lofty hope that X-ray action may some day produce grains, vegetables, cotton and fruits of higher yield and finer quality than ever before.

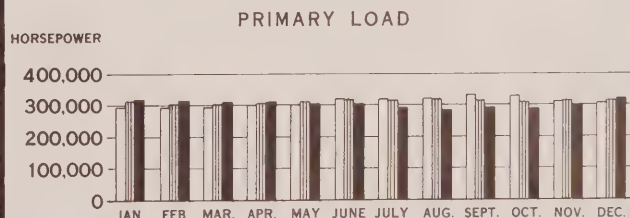
Rapid strides have been made in the fields of radio and television, utilizing the power of the energetic little electrons. Frequency modulation (FM) abolishes the imperfect reception of present-day radio and eliminates static from man-made or natural causes. The clear images produced by television, bringing entertainment, sports and other programmes right into the living room of the home, mark another engineering advance of great importance.

The potentialities of electronics in the post-war period are innumerable. This is the science that stands ready to accompany man on his journey into the world of tomorrow.

### SOUTHERN ONTARIO SYSTEMS NIAGARA — GEORGIAN BAY — EASTERN ONTARIO PRIMARY LOAD



### NORTHERN ONTARIO PROPERTIES AND THUNDER BAY SYSTEM PRIMARY LOAD



### PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	DEC., 1943	DEC., 1942	
NIAGARA SYSTEM	1,794,236	1,727,212	+ 3.9
GEORGIAN BAY SYSTEM	49,732	47,288	+ 5.2
EASTERN ONTARIO SYSTEM	206,845	183,039	+ 13.0
THUNDER BAY SYSTEM	107,775	108,552	- 0.7
NORTHERN ONTARIO PROPERTIES	210,832	209,092	+ 0.8
TOTAL	2,369,420	2,275,183	+ 4.1

# MUNICIPAL LOADS, NOVEMBER, 1943

## NIAGARA SYSTEM (25-Cycle)

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Acton	1,505	1,903	Erie Beach	12	21	Palmerston	559	1,400
Agincourt	205	P.V.	Essex	581	1,886	Paris	1,987	4,604
Ailsa Craig	124	487	Etobicoke Twp.	8,397	V.A.	Parkhill	179	1,029
Alvinston	95	649	Exeter	768	1,654	Petrolia	1,021	2,768
Amherstburg	924	2,704	Fergus	1,243	2,759	Plattsville	133	P.V.
Ancaster Twp.	401	V.A.	Fonthill	195	860	Point Edward	1,776	1,199
Arkona	57	403	Forest	554	1,562	Port Colborne	2,276	6,928
Aurora	1,376	2,821	Forest Hill	7,599	12,172	Port Credit	951	1,934
Aylmer	852	1,985	Galt	11,418	15,126	Port Dalhousie	892	1,599
Ayr	184	760	Georgetown	1,825	2,452	Port Dover	510	1,790
Baden	522	P.V.	Glencoe	204	763	Port Rowan	105	700
Beachville	700	P.V.	Goderich	1,602	4,674	Port Stanley	345	824
Beamsville	436	1,227	Granton	65	P.V.	Preston	4,091	6,656
Belle River	189	836	Grimsby	860	1,988	Princeton	126	P.V.
Blenheim	574	1,873	Guelph	11,334	23,074	Queenston	115	P.V.
Blyth	111	662	Hagersville	1,208	1,524	Richmond Hill	461	1,295
Bolton	180	629	Harriston	444	1,292	Ridgetown	559	1,986
Bothwell	121	683	Harrow	503	1,092	Riverside	1,223	5,235
Brampton	2,585	6,157	Hensall	236	686	Rockwood	107	P.V.
Brantford	22,299	31,622	Hespeler	2,637	2,938	Rodney	150	758
Brantford Twp.	1,188	V.A.	Highgate	111	322	St. Clair Beach	95	138
Bridgeport	153	P.V.	Humberstone	612	2,831	St. George	135	P.V.
Brigden	79	P.V.	Ingersoll	3,351	5,757	St. Jacobs	362	P.V.
Brussels	149	784	Jarvis	188	513	St. Marys	1,492	4,009
Burford	219	P.V.	Kingsville	620	2,453	St. Thomas	7,922	17,045
Burgessville	44	P.V.	Kitchener	26,537	35,456	Sarnia	11,362	18,599
Burlington	1,624	3,925	Lambeth	124	P.V.	Scarborough Twp.	4,887	V.A.
Burlington Beach	421	1,474	LaSalle	247	907	Seaforth	746	1,782
Caledonia	358	1,430	Leamington	1,608	6,048	Simcoe	2,514	6,340
Campbellville	42	P.V.	Listowel	1,362	2,984	Smithville	185	P.V.
Cayuga	123	700	London	39,830	77,105	Springfield	64	382
Chatham	6,705	17,184	London Twp.	633	V.A.	Stamford Twp.	3,139	8,275
Chippawa	351	1,228	Long Branch	1,280	4,258	Stoney Creek	261	933
Clifford	99	491	Lucan	193	643	Stouffville	281	1,198
Clinton	643	1,879	Lynden	103	P.V.	Stratford	6,989	17,163
Comber	170	P.V.	Markham	341	1,175	Strathroy	1,498	2,834
Cottam	81	P.V.	Merlin	94	P.V.	Streetsville	193	701
Courtright	45	355	Merritton	12,509	2,916	Sutton	166	949
Dashwood	109	P.V.	Milton	1,505	1,915	Swansea	3,209	6,907
Delaware	65	P.V.	Milverton	378	994	Tavistock	614	1,080
Delhi	469	2,430	Mimico	2,945	8,354	Tecumseh	382	2,331
Dorchester	103	P.V.	Mitchell	727	1,670	Thamesford	215	P.V.
Drayton	125	528	Moorefield	41	P.V.	Thamesville	223	816
Dresden	443	1,525	Mount Brydges	94	P.V.	Theford	117	598
Drumbo	89	P.V.	Newbury	33	288	Thorndale	71	P.V.
Dublin	47	P.V.	New Hamburg	558	1,441	Thorold	2,769	5,284
Dundas	3,009	5,245	Newmarket	1,777	3,800	Tilbury	1,563	1,923
Dunnville	1,321	3,916	New Toronto	11,925	9,469	Tillsonburg	1,306	4,602
Dutton	263	830	Niagara Falls	10,631	20,371	Toronto	355,276	657,612
East York Twp.	9,095	41,578	Niagara-on-the-Lake	735	1,764	Toronto Twp.	3,098	V.A.
Elmira	1,266	2,069	North York Twp.	11,350	V.A.	Wallaceburg	4,025	4,802
Elora	420	1,185	Norwich	425	1,301	Wardsville	40	221
Embro	179	420	Oil Springs	179	541	Waterdown	253	867
Erieau	72	281	Otterville	92	P.V.	Waterford	449	1,294
						Waterloo	5,489	8,968
						Watford	357	1,023



## MUNICIPAL LOADS, NOVEMBER, 1943

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Welland	11,108	14,899	Neustadt	44	431	Lakefield	418	1,301
Wellesley	110	P.V.	Orangeville	690	2,558	Lanark	83	686
West Lorne	236	768	Owen Sound	6,153	13,559	Lancaster	44	570
Weston	4,778	6,165	Paisley	121	530	Lindsay	3,889	8,345
Wheatley	167	761	Penetanguishene	1,012	4,177	Madoc	222	1,130
Windsor	53,421	118,040	Port Carling	125	520	Marmora	127	1,004
Woodbridge	622	946	Port Elgin	445	1,415	Martintown	37	P.V.
Woodstock	8,257	12,339	Port McNicoll	94	950	Maxville	92	811
Wyoming	76	538	Port Perry	278	1,175	Millbrook	86	749
York Twp.	21,711	77,175	Priceville	10	P.V.	Morrisburg	265	1,484
Zurich	115	P.V.	Ripley	105	420	Napanee	1,335	3,241
(25 and 66-2/3 Cycle)			Rosseau	34	305	Newcastle	171	701
Hamilton	157,979	164,719	Shelburne	241	1,053	Norwood	145	710
St. Catharines	31,658	34,541	Southampton	513	1,467	Omeme	166	630
Trafalgar Twp.	557	V.A.	Stayner	268	1,106	Orono	87	P.V.
(66-2/3 Cycle)			Sunderland	73	P.V.	Oshawa	18,265	26,610
Bronte	198	P.V.	Tara	99	510	Ottawa	37,205	150,861
Oakville	1,189	3,369	Teeswater	134	873	Perth	1,778	4,197
GEORGIAN BAY SYSTEM			Thornton	30	P.V.	Peterborough	11,965	24,977
(60-Cycle)			Tottenham	87	532	Pictou	1,181	3,400
Alliston	409	1,700	Uxbridge	322	1,480	Port Hope	2,460	4,997
Arthur	158	1,089	Victoria Harbour	69	979	Prescott	1,345	3,283
Bala	121	355	Walkerton	935	2,534	Richmond	63	428
Barrie	3,985	355	Waubushene	86	P.V.	Russell	68	P.V.
Beaverton	191	941	Warton	252	1,750	Smiths Falls	2,838	7,741
Beeton	180	617	Windermere	24	117	Stirling	276	947
Bradford	147	1,041	Wingham	682	2,149	Trenton	5,088	8,183
Brechin	51	P.V.	Woodville	76	439	Tweed	234	1,181
Cannington	150	761	EASTERN ONTARIO SYSTEM			Warkworth	64	P.V.
Chatsworth	77	333	(60-Cycle)			Wellington	198	948
Chesley	543	1,812	Alexandria	196	1,976	Westport	90	725
Coldwater	118	545	Apple Hill	44	P.V.	Whitby	1,391	4,236
Collingwood	2,909	6,249	Arnprior	1,242	4,019	Williamsburg	77	P.V.
Cookstown	76	P.V.	Athens	102	626	Winchester	317	1,017
Creemore	136	661	Bath	44	325	THUNDER BAY SYSTEM		
Dundalk	238	686	Belleville	7,624	15,498	(60-Cycle)		
Durham	359	1,874	Bloomfield	103	636	Fort William	17,064	30,370
Elmvale	157	P.V.	Bowmanville	2,705	3,850	Nipigon Twp.	251	V.A.
Elmwood	58	P.V.	Brighton	513	1,462	Port Arthur	23,656	24,217
Flesherton	64	452	Brockville	4,823	10,576	NORTHERN ONTARIO		
Grand Valley	137	645	Cardinal	274	1,602	PROPERTIES		
Gravenhurst	1,197	2,261	Carleton Place	1,776	4,143	Nipissing District		
Hanover	1,362	3,190	Chesterville	287	1,094	(60-Cycle)		
Holstein	18	P.V.	Cobden	91	643	North Bay	4,913	16,013
Huntsville	1,215	2,943	Cobourg	2,230	5,907	Patricia District		
Kincardine	685	2,483	Colborne	221	960	(60-Cycle)		
Kirkfield	24	P.V.	Deseronto	216	1,002	Sioux Lookout	300	1,967
Lucknow	395	856	Finch	86	396	Sudbury District		
Markdale	180	776	Frankford	143	1,095	(60-Cycle)		
Meaford	679	2,759	Hastings	112	823	Capreol	242	1,660
Midland	4,869	6,764	Havelock	136	1,103	Sudbury	9,829	35,812
Mildmay	132	764	Iroquois	202	1,123			
Mount Forest	480	1,936	Kemptville	384	1,230			
			Kingston	13,943	29,545			



# HYDRO *Lightens* The Way

● The familiar Hydro towers, striding across the countryside, are symbolic of a great public enterprise that has contributed much to the development of Ontario. Along the transmission lines, carried by these towers, flows the power that *lightens* the way in many thousands of homes, industries and farms.

*Hydro power is accessible.* It reaches out across the miles to far off city, town or farm . . . ready to serve at the flip of a switch.

*Hydro power is flexible.* It turns the wheels of our factories, mills and mines. It weaves our cloth, grinds our grain, milks our cows, pumps our water. It lifts our elevators, washes our clothes, refrigerates and cooks our food. It lights our homes, runs our radios. Day and night it serves our needs, in hundreds of different ways.

*Hydro power is dependable.* Well-equipped emergency crews and repair equipment stand by day and night ready to keep power flowing into homes.

*Hydro power is economical.* Through the years it is one factor, essential to our everyday living, that has been consistently reduced in price.

Hydro serves the people in thousands of ways. It brings them comfort, ease and convenience. Yet, Hydro's contribution to the welfare of the people, up to now, is but a preview of the promise which the electrical world holds for tomorrow. Since war began, Hydro power has been, and will be, available wherever and whenever it is required by Ontario's war industries. When peace comes, electricity supplied by Hydro will perform services that are certain to contribute much toward new and finer standards of living. This indispensable element, in our everyday life, *lightens* the way in everything we do.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



# HYDRO! News



PIN-UP!

VOL. 31

MARCH, 1944

NUMBER 3

*He got this . . . fighting for*

# YOU



*give* **HIM**  
*a fighting chance  
to live*

● A gift from the heart means *life* to the gallant wounded who fought the good fight for *you* on the battlefield. As war intensifies, the call comes to your Red Cross for *more and more* precious blood serum to save lives . . . for increased shipments of bandages, comforts and supplies . . . more food and medicine for Canadian prisoners of war . . . ambulance and hospital services . . . relief for war-ravished civilians. Day by day the already heavy tasks of your Red Cross multiply and the need for your mercy dollars grows more urgent. Give to the Red Cross with a compassionate heart, more than you ever gave before. Do *that* TODAY!



**Blood Donors  
MUST BE  
BACKED UP  
by  
MONEY  
DONORS**

*Give Generously  
NOW!*

"THE NEED GROWS AS VICTORY NEARS"

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO





## THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

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AND CHIEF ENGINEER.

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### The Front Cover



**J. B. KELLY**, manager  
and secretary of the  
Goderich Public Utilities  
Commission, obligingly be-  
came a "pin-up" when a  
charming member of the  
Women's Voluntary Service  
went to work on him with  
a warsage. The photograph  
was taken by Alan Walker,  
Toronto, at the recent annual  
meetings of the O.M.E.A.  
and A.M.E.U. on February  
9 which, incidentally, was  
Mr. Kelly's 85th birthday.

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March 1944

Number 3

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# *Safety* SESSION



**T**HERE'S a right way to do any job, and the lineman who goes about his business in the wrong way may pay a high price for his carelessness.

This fact has been vividly portrayed through demonstrations conducted by the Electrical Employees' Association of Ontario in various parts of the province over the past thirty years.

Commissioners, managers, and employees of public utilities are brought together in small groups and, on the demonstration board (above) on which are plotted close-to-scale models of poles and transformers, they are shown some of the dangers which may befall the lineman who fails to observe the rules of safety.

Wills Maclachlan, (extreme right) head of the H.E.P.C. employees relations department and secretary-treasurer and engineer for the Electrical Employees' Association of Ontario, explains how a workman may receive an electric shock or be injured by a falling pole.

The demonstration shown above was given at Stratford. In the group, from left to right, are: A. B. Manson, Stratford; reeve H. Hitzeroth, Tavistock; A. Day, Stratford police department; Lewis Reaney, Mitchell; R. B. Hanna, Listowel; C. Forester, Palmerton; and Wills Maclachlan.



# SEES LOWER POWER COSTS AS AMALGAMATION BENEFIT

**Review of 1943 Operations; Proposal to Amalgamate Southern Ontario Systems  
And Give Assistance to Small Municipalities with Higher Costs;  
And a Review of Post-War Opportunities.**

**An Address By DR. THOMAS H. HOGG,  
Chairman and Chief Engineer, The Hydro-Electric Power Commission of Ontario,  
At the Annual Meeting of the Ontario Municipal Electric Association  
And the Association of Municipal Electrical Utilities.  
Toronto, February 8, 1944.**

**I**T is a pleasure to be with you again. My talk today will be concerned—first with the customary review of the past year's work of the Commission, second with a reference to matters of immediate importance, and third with a brief glance at postwar plans.

Behind both the United States and the Canadian production for war, which rightly commands the homage of all United Nations, has been the immediate supply of electric power which never once was "too little or too late". Underlying and penetrating the entire industrial fabric, both of Canada and of the United States, is electric service with its superb flexibility.

The accomplishments of North American production of armaments, planes and ships, depends therefore upon the adequacy of electrical service which has had to meet the pyramided demands of all these loads. And never once has it faltered.

In Canada's change-over to war production, Ontario retained its dominant position as the leading industrial province. Before the war, as you know, it produced 50 per cent of the manufacturing output of the Dominion. The outstanding fact regarding Hydro service during 1943 is that notwithstanding increased difficulties, due to shortages both in labour and materials, the power demands for all war industries in Ontario were met and, except over a few peak-load periods, essential civilian power requirements suffered no shortage.

The Commission now owns and operates forty-seven hydro-electric plants with an aggregate normal plant capacity of 1,630,000 horsepower. In addition it purchases 910,000 horsepower, thus putting to use in Ontario a total of 2,540,000 horsepower.

## **Ontario War Production at Peak**

After more than three years' spectacular growth in load, resulting from the change-over to war production and the construction of great new factories for the manufacture of munitions, and of equipment required for mechanized war-

fare, Ontario last winter attained close to its peak output of industrial production for war. It is not surprising therefore, that during the year 1943 there was a much smaller growth in load. Nevertheless, there was no let-up in war production and the demands for primary power were consistently higher throughout the year. All the increases, however, occurred in the southern Ontario systems where the primary power demand exceeded the power demand of the preceding year by 2.3 per cent. In northern Ontario there was some reduction in load due chiefly to curtailment of gold mining activities.

The total energy output handled by the Commission from all sources in 1943 exceeded 11,730,000,000 kilowatt-hours being slightly above the record output of 11,674,000,000 kilowatt-hours of the previous year, and 55 per cent greater than the energy output of the pre-war year of 1938. The mandatory and voluntary savings in the use of power were necessarily continued and were an important factor in enabling the Commission to handle effectively the increasing war demands.

We look forward to the time when these restrictions can be lifted, but that time has not yet come. We are still in a very critical stage of the war. Production and still more production must characterize the efforts of the home front.

## **New Construction in 1943**

During the year precipitation and stream-flow conditions were favourable and an adequate supply of water for all generating plants was available. The construction of the remedial weir on the Niagara river above the falls, together with the high level of lake Erie, appreciably increased the output of the Queenston generating station.

On October 15, 1943, the new \$6,000,000 DeCew Falls power plant was opened by the Prime Minister. Col. Drew paid tribute to the skill, organization and tradition of The Hydro-Electric Power Commission of Ontario and referred to the development as "this new fort of freedom."

The new plant at DeCew Falls with its single unit rated at 65,000 horsepower, but developing 71,000 horsepower, generates more power than do the nine units in the nearby original plant constructed in 1898, and the power house is only one-third the size. Power is generated at twenty-five cycles to augment the supplies of the Niagara system. Owing to the fact that the total fall or head utilized at DeCew is only a little greater than that developed at the Abitibi Canyon plant in northern Ontario, it was feasible to transfer a spare turbine and generator from Abitibi to DeCew Falls. The use of this unit enabled the Commission to complete the development with the minimum interference to other war-time production.

The water required for the operation of this plant results from the Ogoki and Long Lake diversion projects which divert water to the Great Lakes from the Albany river drainage basin one thousand miles away. You will recall that the agreement with the United States respecting use of the additional inflow to lake Superior provides for an increased diversion at Niagara.

The Ogoki diversion project, of which you will later this afternoon see some moving pictures, was completed and officially opened on July 20, 1943. Since that date the diverted flow has been gradually increased from an initial flow of 950 cubic feet per second to its designed average flow of 4,000 cubic feet per second. The Ogoki diversion will make possible the addition of 90,000 horsepower at developed and undeveloped sites on the Nipigon river, and the combined flows of the Ogoki river and Long Lake diversions will make available a total of 360,000 additional horsepower at various sites along the Great Lakes-St. Lawrence River waterway.

### **Great Iron Deposits Being Developed**

The increased flow of the Nipigon river resulting from the Ogoki diversion enables the Commission to provide more effectively the power required to develop the iron deposits at Steep Rock lake. It also justifies the installation of a fourth unit of 20,000 horsepower at Alexander generating station, for which tenders for equipment are being called.

As most of you know, the responsibility for the fact that the Commission operates so widely in northern Ontario rests with the Province and not with the cooperating municipalities. It was therefore, at the request of the Provincial Government that the Hydro Commission cooperated to ensure that ample supplies of power for these extensive operations would be available.

In November last, The Hydro-Electric Power Commission, acting for the Provincial Government, completed a transmission line from Port Arthur to the Steep Rock Iron Mines. As a simple statement of fact this records another routine accomplishment in which power was delivered on time by the Hydro, but behind it is a story of a job well done against great difficulties, in a rough and largely undeveloped country.

The diversion of the Seine river, which flowed into Steep Rock lake, has put out of commission a power plant of 10,000 horsepower known as the Moose Lake plant of the Ontario-Minnesota Pulp and Paper Co. It is to replace this power and to supply about 7,000 horsepower for the

pumping and mining operations of the Steep Rock Iron Mines Ltd., that The Hydro-Electric Power Commission has constructed the new transmission line. The transmission line extends 120 miles from a transformer station at Port Arthur to the Moose Lake plant of the Ontario-Minnesota Pulp and Paper Co. The Steep Rock Iron Mines is constructing the additional few miles of line required to distribute the power from this plant to the various points of use.

Before leaving this item, I would like to emphasize the fact that the agreements relating to the construction of this transmission line are the agreements of the Legislature of the Province of Ontario, and the undertaking is being proceeded with by the Commission as trustee on behalf of the people of Ontario, to whom the Government is responsible, and not as a Hydro municipal enterprise.

If the iron ore deposits in extent and quality come up to the standard anticipated as a result of the scientific prospecting and drilling that has been done, the importance of these developments to Canadian economic life will unquestionably be far-reaching and of great importance.

### **Heavy War Loads Increase Maintenance Problems**

The heavier loads being carried by the Commission's generating plants result in wear and tear that involves additional maintenance work. I will not take time to refer to these matters in detail except to state that, due to shortage of skilled labour and supplies, only the more urgent work required to ensure maximum service is being carried out in these war years.

During the year additional equipment and extensions to lines were required on all systems. Among industries of recent additional growth may be cited the steel industry which, during the past year, installed additional electric furnaces for the manufacture of high grade alloy steel; the aircraft plants where some expansion took place and the ship-building industry which manufactures the smaller vessels of war.

### **Rural Electrical Service**

During the latter part of 1941 and through 1942, following five years of intense activity when the mileage of rural primary lines was nearly doubled, construction of extensions to rural lines virtually came to a standstill except where required to serve certain war industries established in rural areas. However, on March 30, 1943, the Dominion Metals Controller issued an order releasing to some extent the rigid controls previously enforced and permitting service to farmers where the farmer could show definitely that by the use of electric service increased food production could be obtained. From May to October, 1943 more than 2,100 farm applications were approved by the Commission and a large proportion of these were actually being served at the end of the year.

At the end of 1943 the Commission was serving 136,000 rural customers including about 65,000 farms, over 20,100 miles of rural transmission line.

I shall later deal with the future programme for rural service.



## Financial Operating Results

The measures taken during 1942 to conserve power supplies for essential war purposes continued throughout 1943 to restrict revenues received from the supply of power to municipalities and rural power districts. The southern systems as a whole had about two per cent more revenue than in 1942 and the balance available for reserves is approximately equal to that of last year. In the Thunder Bay system results were substantially unchanged from those in 1942. The Northern Ontario Properties, notwithstanding continued decline in the revenue from the power supplied to gold mines, were able to make adequate provision for reserves.

Gross capital expenditures during the fiscal year were about eight and one-half million dollars.

## Power Supplies Have Met Requirements

Last year I ventured to predict in a general way the probable loads for 1943 and the sufficiency of the power supplies of the Commission to meet them. I summed up the situation by indicating that if restrictions and conservation measures were maintained and conditions at the many generating stations of the Commission were reasonably favourable, we should be able, with the additional power being made available, to get through the winter of 1943-44 without undue difficulty. As it turned out, climatic and stream-flow conditions were quite favourable and the winter, as you know, has been exceptionally mild, and free from storm hazards.

## Amalgamation of Southern Ontario Systems

So much for the review of the past year's activities. I now wish to make an announcement of importance to all Hydro municipalities of southern Ontario.

On more than one occasion I have referred to the desirability at an appropriate time of amalgamating or integrating the Niagara, Georgian Bay and Eastern Ontario systems into one system, to be known as the Southern Ontario system. This time, I believe, has now arrived, and the Commission, with your approval, proposes to take this progressive step immediately.

The larger the group of effectively interconnected generating stations the less troublesome or harmful is the loss of any single generating unit or complete station, and the smaller is the percentage of reserve capacity needed for the whole of the interconnected system. Furthermore, the larger the territory served from interconnected systems the less violent is the overall effect of local weather disturbances such as severe thunderstorms. Interconnection, therefore, gives definite benefits in operational service and in investment in reserve capacity. For some years the three southern systems have been benefiting in a limited way through the interconnection of the transmission networks by frequency-changers and tie lines.

Physical interconnection, however, does not secure the maximum benefits available to interconnected systems. In the Georgian Bay system you will recall that interconnection of the Severn, Eugenia, Wasdells Falls and Muskoka systems was quickly followed by amalgamation of all financial and administrative features greatly to the advantage of all districts. Similarly the Eastern Ontario system amalgamated

smaller systems known as the Central Ontario and Trent, the Rideau, the St. Lawrence, Ottawa and Madawaska systems.

So you will see that the integration of the financial and physical assets of these systems, which will of course include pooling of all generating costs, is simply a continuation of the policy that gave us the Georgian Bay and Eastern Ontario systems by the process of amalgamation. Amalgamation is the logical outcome of the physical growth of interconnection and power exchange facilities in southern Ontario.

The amalgamation will make it possible to undertake larger and more economical power generating projects with less risk of loss due to inability to put the new power to use within a reasonable time. It will enable all municipalities to share in the resulting economic benefits of all additional power sites as they are developed, irrespective of frequency.

The financial problem of interchange of power which has been troublesome out of proportion to its importance will be greatly simplified; the frequency-changers and tie lines becoming items of southern Ontario common costs. Direct tie lines operating at 60 cycles between the Georgian Bay and Eastern Ontario systems can be established as required to the advantage of all concerned. Many other useful common measures can be undertaken with greater facility.

While it may take a little time to effect the complete amalgamation, the first benefit of this change will be seen in the pooling of generating costs.

## Assistance to Small Municipalities With Higher Wholesale Unit Costs

For some time the Commission has had under consideration the possibility of giving some relief to certain small municipalities whose average cost of power, due to various circumstances, has been relatively high. Above a certain level higher wholesale costs may, and probably do, result in rate schedules which tend to discourage a greater use of Hydro service. The Commission believes that such a situation is not in the general interest of the undertaking. The statistics in the Annual Report of the Commission, however, show that this problem is not a serious one financially. The aggregate revenue from, and the aggregate horsepower supplied to, the small municipalities that had in 1942 a wholesale cost per horsepower exceeding \$40 is quite small. To only eleven small municipalities did the cost per horsepower exceed \$50 but there were in addition about fifty municipalities to which the average cost was between \$40 and \$50 per horsepower.

Now the amalgamation to be made of the three southern systems will itself provide some relief to these smaller municipalities; but something further is required.

Careful studies have been made of various means to alleviate this situation and it is believed the best way—**providing such a course has the support of the cost contract municipalities**—would be to utilize a small amount in the cost of power to the municipalities so as to bring the maximum cost of power to these exceptional cases more in line

with the cost obtaining in the majority of smaller municipalities.

### Flat or Uniform Rates

I would like at this point and before dealing with future problems to make a brief comment upon the subject of "Flat Rates" which has been under consideration by your post war committee. I trust you all will study carefully its report.

First, I believe that when Flat Rates have been discussed in relation to the supply of power by this Commission, many of those who have suggested them, and certainly most of those who have accepted the idea, have assumed that **uniform wholesale costs would result in uniform rates to consumers. This is not so.**

Second, those advocating Flat Rates appear to assume that the Commission in its cooperative systems "sells" power at a fixed rate or price as do private companies. This, also, is not so. Actually, to the cooperating municipalities, the Commission does not "sell" power at all, and certainly not at fixed prices. It **supplies power at cost**—and the unit cost per horsepower may vary up or down each year.

Let me illustrate the process by an example. Suppose an undertaking of the Hydro character with hydro-electric plants of 900,000 horsepower capacity were, in a prosperous year, to operate at full load and its costs were \$18,000,000. Its average revenue to meet costs would have to be \$20 per horsepower.

If in the next year a serious depression set in and its load dropped to two-thirds of its full capacity, or 600,000 horsepower—an entirely possible variation following an inflated capacity to meet war emergencies—its annual operating costs would remain about the same, its investment charges for interest and sinking fund would not change, and unless substantial reductions in its contributions to other reserve funds were made, the total annual revenues to meet total costs would have to be much the same as in the prosperous year, namely \$18,000,000 which, divided by 600,000 horsepower, would be an average cost per horsepower 50 per cent greater or \$30 per horsepower.

While there are certain factors which make the fluctuations in unit costs less severe, this is precisely the system under which the Hydro cooperative plan operates.

In the Hydro cooperative enterprise, wholesale unit costs of the Commission cannot be maintained constant under fluctuating loads. Nor can the annual costs per horsepower to the partner municipalities be maintained without change. But rapid and severe fluctuations in the annual charges made to the municipal partners are minimized by the setting aside and administration of the Commission's contingencies and stabilization reserves. These supply for the Hydro type of organization the essential flexibility required.

The purpose of these special Commission reserves, therefore, is to minimize fluctuations in wholesale costs. To do this they must not only be accumulated when circumstances permit, but utilized at appropriate times for their designed function.

There are many other complex angles to this question of uniform rates. If uniform rates for service to urban consumers are desired throughout Ontario, they can only

be given by a central organization becoming completely responsible for all retail distribution of service to consumers, and by doing away with local administration except as branch offices of the central body. In other words the local Hydro utility commissions which have done so much to foster and make successful the whole Hydro enterprise would cease to exist.

### Electricity Down—Other Commodities Up

While on the subject of costs may I draw your attention to a very striking phenomenon; that whereas the costs of most commodities used by the householder have increased in price under the stress of war, the cost of electricity has remained stable and in some cases has been reduced.

Related to this aspect of Hydro service is the question of further reductions in rates. As you know, at the outbreak of war I called attention to the fact that it would be the policy of the Commission to build up the reserves of the Commission, and to encourage the municipal utilities to do the same with their reserves, in order that after the war the low consumer rates may be maintained even should revenues decline. This policy has greatly strengthened the financial position both of the Commission and the Hydro utilities.

In some cases the surpluses accumulated might normally justify reductions in rates. The Commission believes, however, that as a general policy it would be preferable, in most cases, to maintain the rates at the present low levels until after the war and where justified give rebates to consumers rather than reductions in rates. In doing this, however, the necessity for post-war improvements, modernization of the local plant and maintenance of low rates to consumers must be kept in mind.

The Commission for some months has been studying the whole question of the cost of power, both to the municipalities and also to your consumers. Next month, when I expect these studies will be completed, we should be in a position to advise you of the results.

I anticipate that there will be a small reduction in the cost of power to practically all municipalities and that the effect of amalgamation of the southern Ontario systems will be reflected in these costs. Whether municipal utilities can reduce their consumer rates by means of rebates, or by reduction of rates in some cases, will depend in each instance upon individual circumstances, but I do not anticipate that we shall recommend other than small reductions and only where they are clearly justified.

### Post-War Problems

The brief but essential review of last year's activities, and the other important matters I have dealt with, have left but little time to discuss future problems. However, the Commission has been carefully analyzing its post-war problems and has prepared plans for their solution. Let us examine the fundamental problems.

After the war Hydro must continue to provide an adequate supply of low-cost power for industrial, agricultural and domestic use. In supplying this service Hydro provides the means for an overall better standard of living. Because electricity is the life blood of industry we must ensure that



the necessary steps are taken to provide adequate new sources of power in time to meet industrial requirements.

For example, we must realize that in southern Ontario we have a total load of 2 million horsepower and the addition of the new DeCew Falls plant of 65,000 horsepower amounted to only 3 per cent increase in generating capacity.

There will, of course, be a period of readjustment immediately after the war, but it is anticipated that it will be necessary to provide new sources of power to meet growing industrial requirements after that period of readjustment. The Commission has been studying this problem and is preparing to meet it.

During the war Canada has increased greatly not only its industrial output but its ability to produce. Even prior to the war, we had become one of the great exporting nations of the world. How much of our pre-war trade can we retain or regain? What competition shall we meet, knowing that so many countries have increased their industrial activities? What profitable markets will there be for our industrial and agricultural production in countries ravaged by war? What imports are we prepared to accept in payment for exports? These are just a few of the questions that arise when we begin to think of post-war conditions.

Personally, so far as Canada, and Ontario in particular, are concerned, I look forward to the future with confidence. Furthermore, the continued provision of ample supplies of power is one of the basic factors which will assist the growth and prosperity of the Dominion through the coming decades. Modern high standards of living depend to a considerable extent on electrical service and such standards will help to make Canada attractive to the best elements of European peoples, particularly our British connections who, if we can attract and hold them will, as in the past, bring to our shores a varied and profitable variety of technical skills helpful both to our agricultural and industrial economy.

### Conservation Related to Hydro-Electric Power

I now wish just to mention, for time is short, two suggestions for national policy in post-war planning, closely related to the provision and utilization of electric power.

First, in regard to the further development of our water power resources, it is important to maintain, and where possible to improve the regimen of the stream-flow of our power producing rivers. This in turn involves conservation of our land resources in its widest interpretation.

The fertility of our land is basic. It has been said that our civilization depends upon the top six inches of our soil. To preserve this from loss by erosion and in other ways, contributes to the supplies of ground water; to the fertility of our soils and to the satisfactory run-off of our rivers. Lands unsuitable for agriculture should be reclaimed for the forest. In this country especially in the areas to the north, forest growth is relatively slow as compared, for example, with the growth in the southern United States, and it is not too early to place our forest resources upon an annual crop basis. Reforestation and rigid control of forest industries will help to maintain the uniformity of streamflow, and this can be aided by the construction of storage reservoirs at the head waters of our streams. The

**Hydro-Electric Power Commission is intimately concerned with this matter in all parts of the Province.**

True conservation also means wise use, and my second suggestion is that before we export our natural resources we should endeavour to apply to them the skill of our workmen and the hydro-electric power derived from our streams. Thus, as far as is economically feasible and without being blinded by our own limited interests, let us manufacture finished goods rather than export raw materials. By so doing we shall find profitable employment both for our returning men and our supplies of power, when the hoped for time comes to produce the ploughshares of peace instead of fabricating the weapons of war.

### Some Post-War Projects

I have mentioned some of the uncertainties of post-war planning, but it is more profitable for us, individually and collectively, to save and plan for the things we can do as a start.

First, then, with respect to the Commission's own power supply equipment. During the war years it has been necessary to defer maintenance work not actually essential to the war effort. One of the reasons for Hydro's ability to meet the unprecedented demands of the past four years is the sound policy always followed of maintaining a high standard of construction and equipment in its generating plants and transmission and distribution networks. Under war conditions we have had to be content with a somewhat lower standard of maintenance. There is an accumulated back log of many jobs to be tackled when men and materials are available. The funds necessary have already been provided in the Commission's reserves.

The same situation holds in the local Hydro utilities. The local commissions and technical staff should, as time permits, advance their plans for a complete overhaul and modernization of their distribution equipment. They should also prepare to cooperate with the Commission in a province-wide programme, designed to extend the utilization of electrical service in many ways including the modernization of street and highway lighting.

### Rural Service Opportunities

Now may I turn for a few minutes to the opportunities that will open up in rural Ontario.

You are all now familiar with the fact that as from January 1, this year, the Commission has put into operation a comprehensive revision of its rural service which is, perhaps, the greatest step undertaken since the formation of rural power districts in 1921, and the subsequent grants-in-aid inaugurated by the Province in connection with its well established policy of assisting agriculture. At one step, the Commission has adopted a uniform rate for rural service in all the areas formerly served by its 120 rural power districts, which have now been amalgamated into one district, with a pooling of all revenues and expenses, and of surpluses and deficits.

Partly, perhaps, because so many urban citizens have their roots "back on the farm" the provincial policy of aid to agriculture through better electrical service has always had the sympathetic support of the cities and towns of the

Province. The physical basis of the whole rural electrification programme is the transmission networks and generating stations constructed and financed by the cooperative urban municipalities.

It should be noted, however, that this rural amalgamation and unification of rates is possible only because of the Provincial financial assistance. The new set-up is a means of apportioning the benefits from provincial grants where they will do most good, namely to the farmer in sparsely settled or less fertile farming districts where, because of these conditions, electrical service is necessarily more costly to provide.

It would be possible to spend an afternoon discussing the many aspects of rural electric service. However, I think I should mention that any growth in rural loads will further assist in reducing the cost of power to small urban centres.

I think it may confidently be claimed that the new Hydro rural rates and plans for extension, if compared with service in similar territory elsewhere, will be seen to give

the most widespread distribution, (having regard to the density of population) and the lowest cost for comparable service. The low uniform rural rates afford a challenging opportunity to the farmer himself to make the best use of Hydro service.

In conclusion, may I leave this thought with you.

We are all public servants in the truest sense of the word. Our job is to provide one of the most essential public services. That job must be performed at the highest level of efficiency.

We have already, over 35 years, set a high standard of service, but in this rapidly changing world we must be highly sensitive to new ideas and, by using our best judgment, constantly test and improve our methods in order that we can continue to provide a modern service.

Guided by sound principles of engineering and economics, we must nevertheless advance with public thought as well as with science. To give the best service at the lowest cost has always actuated Hydro policy. To do this is the high responsibility and privilege of every Hydro employee and commissioner.





## \* Page Three \*

### INTERESTING PREDICTIONS

**T**HERE is general agreement among responsible government and business leaders that there is a need for constructive post-war planning if the United Nations are to achieve a victory which will assure lasting peace.

At this time, when the character of that planning is assuming a vital significance in the minds of all Canadians, it is interesting to note the predictions made recently by Professor Ralph E. Freeman of the Massachusetts Institute of Technology when addressing a gathering of O.M.E.A. and A.M.E.U. delegates.

In that address, a digest of which is published in this issue of Hydro News, Professor Freeman expresses the belief that both the "reconversion slump" and the "replacement boom" will be more extreme in the United States than they will be in Canada. He sees the most critical economic problems arising after reconversion have been completed and after many of the post-war deficiencies have been corrected.

In summing up, he comes to the logical conclusion that just as successful military operations involve an anticipation of enemy strategy, similar foresight is essential in combating the forces of depression.

The soundness of this reasoning is obvious: to apply it successfully will demand the highest type of initiative on the part of those whose efforts will help shape the economic destiny of the world after the war.

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### THE QUALITY OF MERCY

**B**ATTLEFIELDS and enemy prison camps are not pleasant places.

This may be regarded as a rather obvious fact, but it is one whose significance should be carefully considered at this time when the Canadian Red Cross is enlisting support of all Canadians in order that it may continue to accomplish its all-important mission of mercy in this war.

Before March 15, the sum of ten million dollars must be raised.

There are thousands of British and Canadian prisoners of war to whom the Red Cross means eagerly-awaited food parcels. During the present year approximately five and a

half million dollars will be needed to carry on this work, while another three million will be required to provide hospital supplies and comforts for armed forces and civilians. To meet contingencies and grants and maintain blood donor and other war services will make demands approximating two and a half million dollars.

On battlefields, where death roars in the air and lurks in the ground, fighting men are slogging through red-stained mire and muck. In prison camps others are watching and waiting. The Red Cross cannot fail these men and Canadians cannot fail the Red Cross.

The campaign now under way presents an opportunity to prove that "the quality of mercy is not strained."

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### AMALGAMATION

**I**N asking that the Ontario Municipal Electric Association vote upon the proposed amalgamation of the three southern Ontario systems, Dr. Thomas H. Hogg, chairman and chief engineer of the H.E.P.C., is adhering to the principle that important decisions should be made in a democratic way.

At the recent convention, the Hydro chairman gave his considered judgment on this question. He believes that the time has now arrived when, with the approval of the partner municipalities, the Niagara, Georgian Bay and Eastern Ontario systems should be amalgamated.

In advising this move, he directed attention to the more dependable service resulting from interconnected systems covering larger areas, and to the smaller investment in reserve capacity needed when complete integration of transmission networks and generating facilities is secured. He also explained how amalgamation would make it less hazardous to undertake larger and more economical power generating projects, and enable the municipalities to share in the resulting economic benefits.

Members of a special O.M.E.A. committee are now examining all facts involved, and on March 15 they will report to a special meeting of the O.M.E.A.

Dr. Hogg advised the delegates at the annual meeting that, with their approval, the Commission will act in this matter without delay.

# At the ANNUAL MEETINGS

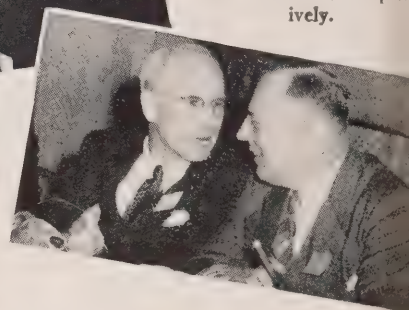


PRIME MINISTER George A. Drew (above) addresses the joint annual dinner of the O.M.E.A. and A.M.E.U.

THIS IS a section of the joint gathering of delegates who heard Dr. Thomas H. Hogg's address.

OBTAINING A good vantage point, the photographer got this interesting study of the Hydro chairman.

SHOWN HERE are Kenneth A. Christie, K.C., and Ralph B. Chandler, the 1943 presidents of the O.M.E.A. and A.M.E.U., respectively.



**A** VOTE on the proposed amalgamation of the three Southern Ontario systems and on the recommendation to reduce the average cost of power to certain small municipalities will be recorded at a special meeting of the Ontario Municipal Electric Association to be held in the H.E.P.C. Administration Building, Toronto, on March 15.

Emerging from the recent annual meeting of that body on February 8 and 9 in Toronto, the proposals were placed in the hands of a special committee with instructions to obtain all necessary data and report to the special meeting of the O.M.E.A.

The committee named at the convention included Kenneth A. Christie, K.C., Toronto, former president of the O.M.E.A.; W. R. Strike, Bowmanville, the new president; R. D. Boyes, Alliston; A. G. Jennings, East York; John A. Leslie, Scarborough Township; K. C. MacLeod, Stamford; Roy Pierson, Brantford Township; H. O. Hawke, Galt; F. H. May, St. Marys; J. B. Hay, London, and A. G. Edwards, Windsor. Engineers of local utilities in each of the three systems were also added to the Committee.

Announcement of the March 15 meeting of the O.M.E.A. was made following a recent all-day session of the special committee in Toronto.

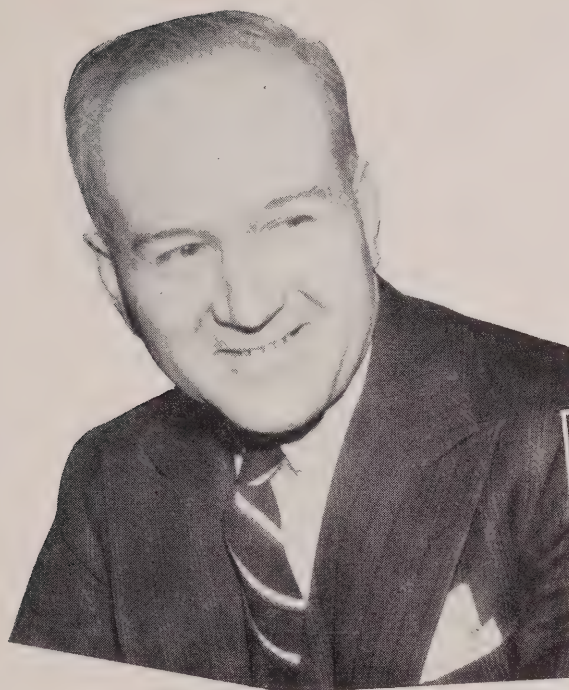
In his address, Dr. Thomas H. Hogg, chairman and chief engineer of the H.E.P.C., told a joint session of the O.M.E.A. and A.M.E.U. at the annual meetings of these groups, that he believed the time had come to integrate the Niagara, Georgian Bay and Eastern Ontario systems.

"The Commission, with your approval," he said, "proposes to take this progressive step immediately."

Amalgamation, the Hydro chairman pointed out, would make it possible to undertake larger and more economical power generating projects with less risk of loss due to inability to put new power to use within a reasonable time. It would also, he said, enable all municipalities to share in the resulting economic benefits of all additional power sites as they were developed, irrespective of frequency. While it would take a little time to effect amalgamation, the first benefit of the change would be seen in the pooling of generating costs, Dr. Hogg stated.

(Continued on page 12)





HERE'S THE newly elected president of the O.M.E.A., W. Ross Strike of Bowmanville.

## CO-OPERATION IS SEEN AS HYDRO CORNER STONE

Service To People Is Guiding Principle,  
Says Kenneth A. Christie

**C**O-OPERATION is the corner stone of the foundation on which Hydro has been built, Kenneth A. Christie, retiring president of the O.M.E.A., told delegates to the annual meeting at its opening session in the Royal York.

"Hydro is basically and fundamentally a co-operative enterprise," he said. "Municipalities must learn first of all to co-operate among themselves. This is not always an easy matter as the different sections of the Province have varied interests. However, we must learn to give and take among ourselves and present to the outside world a united front. I have been particularly pleased, during my tenure of office, with the co-operation which I have received from Dr. Hogg and the members of The Hydro-Electric Power Commission of Ontario," he declared.

Mr. Christie said that his association had received splendid co-operation from the Association of Municipal Electrical Utilities and that they had worked together on many matters in a spirit of harmony.

"Great problems will arise in the post-war era," continued the speaker. "Hydro will have its own particular contribution to make to the solution of those problems. I suggest to you that we could not make a finer contribution than to give to the world a living example of an organization in which co-operation is the guiding principle and service to the people is its one and only object."

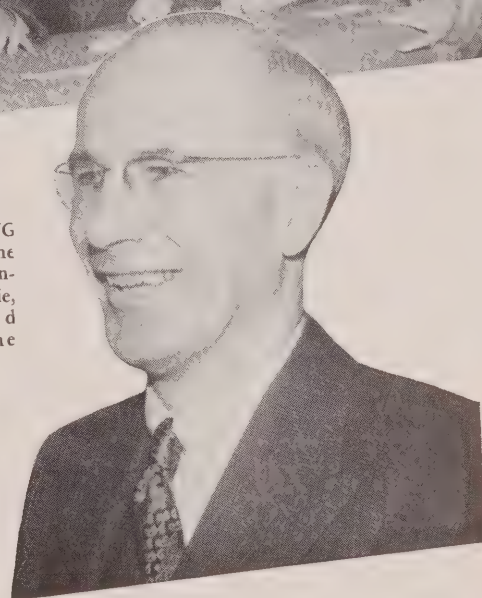
He urged the delegates to maintain a strong organization in order to make an effective contribution toward the shaping of Hydro policies. He pointed out that the appointment of auditors this year was not only sound business practice, but by relieving the finance committee of this type of work, it would give them more time to consider financial policy.

Mr. Christie stated that the Hydro enterprise in Ontario would rest upon the service it rendered to its citizens

OVER ELEVEN hundred delegates took part in the annual meetings. Three are shown registering.



THE RETIRING president of the O.M.E.A., Kenneth A. Christie, K.C., smiled nicely for the photographer.



and urged that there should be a continuous endeavour to extend its benefits to as many people as possible. He declared that in order to do this the O.M.E.A. must advocate as low rates as are compatible with a strong financial structure.

"In order to render the greatest service to the people it is essential that we maintain the non-partisan character of our association," he warned. "We must, at all times, be ready to resist, no matter from what source, any attacks or encroachments which may be made upon the principle of public ownership."

Mr. Christie also paid tribute to Hydro News and the manner in which it had presented reports of the district meetings.



## BETTER THINGS DONE AND IN BETTER WAYS

**Electronic Control In Industry Discussed  
By Speaker At A.M.E.U. Meeting**

**A**N accomplishment of today." In these words, A. G. Turnbull of the Canadian General Electric Company referred to electronics when addressing A.M.E.U. delegates at the recent annual meeting.

Speaking on the subject, "Electronically Controlled Equipment In Industry," the speaker pointed out that electronics was the science of controlling electricity which had been freed from the boundary of conducting wires to do better things in better ways.

"Note," he stated, "in this definition of our science the more or less direct reference to the terms 'free' and 'control'. It may seem rather strange or, in fact, an inefficient way of doing things to free electricity from a solid conductor, where we, no doubt, had control of it, into space, and then concern ourselves with controlling it again. The reason we free electricity into space is because, when we have it in this free state, it is subject to a method of control which is not possible while restrained in a conductor—it is subject to methods of control, which can be utilized to provide industry with better ways of doing better things."

Continuing, Mr. Turnbull said, the practical medium by which electricity was freed from a solid conductor into space, and there controlled, both directly and indirectly, by methods which provide these better ways of doing better things, was known as an electronic tube. The electronic tube, he stated, was the means whereby the science of electronics is put to work.

"With the use of electronics," he said, "a machine is used to automatically sort beans and peanuts. The articles, carried one by one on a revolving vacuum drum, are viewed by a phototube which passes judgment. If light in colour, they are retained and dropped on to the conveyor belt. If,

however, the beans or peanuts are discoloured, an ejector mechanism operated by an electric eye, sends them into a separate container."

The application of electronics, he proceeded, made it possible to control coffee roasters and corn flake ovens, sort cigars, lemons and raisins; test oil and eliminate green peas from canning stock. By enlisting the aid of electronics they could also detect missing labels, reject non-sharp razor blades, compare colours, adjust automobile headlights, detect flaws in products, sort cheques and bills and even match false teeth, the speaker declared.

Mr. Turnbull pointed out that one of the most interesting and practical applications of photoelectric control was that of preregister control of multi-colour printing presses. Paper travelling at a speed of 1,000 feet per minute was first printed with one colour, then passed over drying drums and compensator rolls for 20 to 30 feet to another printing cylinder where a second design, this time of different colour, was printed.

"Electronic control," he stated, "is employed to paint with light—electronically controlled light. In this way we are able to enjoy these striking lighting effects at Maple Leaf Gardens on special occasions. The same thing applies at the Canadian National Exhibition band shell at Toronto, where one colour tint blends into another.

"Because of accurate control and precise timing," he went on, "electronic control has expanded the use of resistance welding. It has made possible the fabrication of aluminum, stainless steels, certain alloys and dissimilar metals once thought impossible to weld in production, and has been a powerful contributor to the war effort. The speedy production of the modern aluminum plane is a typical example. And electronically controlled resistance welding does in days, rivetting work that formerly took weeks."

"Electronics," Mr. Turnbull said in closing, "seeks no favours, and in return this science asks that it be not expected to perform miracles. Electronics requests that it be given the opportunity of proving its worth."



HERE ARE the newly elected officers of the A.M.E.U. as they sat down to their first executive session following the annual meeting at the Royal York Hotel. They are: from left to right, J. R. Sullivan, Woodstock; O. H. Scott, Belleville; R. S. King, Midland; M. W. Rogers, Carleton Place; R. J. Smith, Perth; S. W. Canniff, Ottawa, president; S. R. A. Clement, H.E.P.C., secretary; R. B. Chandler, Port Arthur, past president; A. W. Bradt, Hamilton; F. A. Archer, H.E.P.C., treasurer; R. S. Reynolds, Chatham; and A. W. H. Taber, North Bay. William Tait, Picton, was absent when the picture was taken.



## Says Ontario Ready to Proceed With St. Lawrence Development

**Prime Minister Foresees Need For Power To  
Supply Province's Increasing Industrial  
Demand After The War**

ONTARIO is "all set" to proceed with the power development of the St. Lawrence after the war. This, in brief, was the assurance given by Prime Minister George A. Drew, when addressing a capacity gathering of O.M.E.A. and A.M.E.U. delegates at the joint annual dinner in the Royal York Hotel, Toronto, on February 8.

At the same time, Col. Drew announced that during the present session of the Legislature an act is being introduced to set up a committee of five to advise upon questions of broad Hydro policy, and that the Ontario Municipal Electric Association will be "well and adequately represented in the appointments which are made."

In the development of the better post-war world, which would emerge from the trials of war, the Prime Minister declared, electric power would play an increasingly important role. For that reason the government and the H.E.P.C., he said, were anxious to proceed, as soon as possible, with the power development of the St. Lawrence river, and of the other power sites still available in various parts of the province.

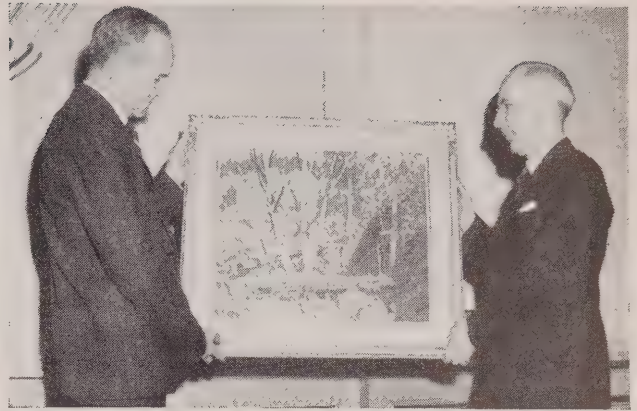
"But," continued Col. Drew, "it is neither good business, nor is it wise to attempt this work until at least the first stage of the war is over, and demobilization provides the manpower which will be required. But plans are ready and will be put into effect at the time when work is needed during the period of industrial readjustment from war to peace."

### Land of Greatest Opportunity

Proceeding, the speaker said that it was difficult to see the picture in all its detail because so much would depend upon the kind of peace which followed the war. It was certain, however, he maintained, that Canada would emerge as the land of greatest opportunity in the whole world, and that no part of Canada offered greater possibilities than Ontario.

That thought, the Prime Minister told his audience, would be behind everything they did. In planning for the future, he said, they had to be ready to provide for rapid industrial expansion and to assure adequate supplies of power for the new industrial growth which would take place.

"In planning for the future," he continued, "every municipality will play its part. Already The Hydro-Electric Power Commission of Ontario is doing what it can in spreading its network of transmission lines throughout the province and in reducing power costs so that new industry may locate throughout Ontario. It is generally agreed that working conditions and the welfare of our children can be greatly improved by having industrial units spread over as wide an area as possible. Already, much has been done to prepare for plans of that kind and much more will have



IN RECOGNITION of his services as president of the O.M.E.A. for two years, Kenneth A. Christie, K.C., was the recipient of a fine oil painting. Here he is shown with W. R. Strike, the new president, admiring the painting.

to be done as soon as the necessary readjustment can be made."

Col. Drew said that in all this work it was extremely important that the Ontario Municipal Electric Association be brought into close contact with what is being done, and offer the advantage of its combined experience in preparing for the future.

Commenting on the committee whose members will advise on questions of broad Hydro policy, the Prime Minister said that it was the government's desire to make use of all the experience, energy and vision which had contributed so much to the efficient distribution of power. "By setting up a committee fully representative of our people," he stated, "it is hoped that all the useful ideas which are being worked out can be brought more quickly into action."

### Expresses Confidence in Future

Continuing, he declared, "I speak with confidence about our future and about the need there will be for power to supply increasing industrial demands. I am convinced that this province with its vast resources of raw materials, its great resources of hydro-electric power and fertile land, can support with increasing prosperity a population several times what we have today. The world is going to need the things that we can produce as never before in the past. We are going to need the new industries to produce those things which we have not yet made."

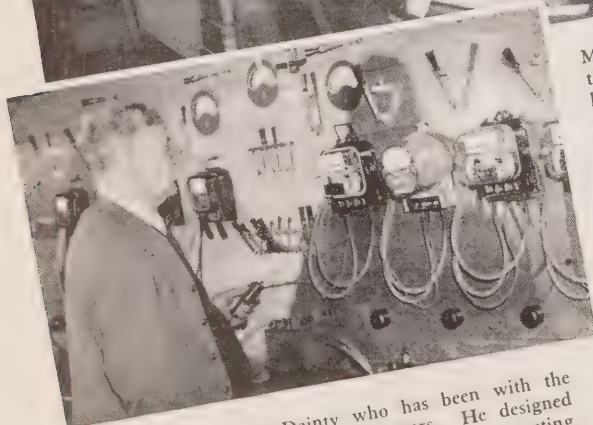
The Prime Minister said the only thing they in Ontario had to fear was fear itself. No similar area in the whole world occupied by a similar number of people, possessed so much productive land, so much mineral wealth, such vast resources of wood and such great opportunities to put its waters to work to turn the wheels of industry by electric power.

"In all earnestness," he said, "may I express my own faith that before us lies our greatest period of opportunity if we work together in a spirit of co-operation, and have confidence in our own ability to create employment by the wise use of the mighty resources which Providence has placed in our hands."



# EAST YORK TAKES A BOW

THIS IS the present office of the East York Township Hydro-Electric Commission. It will be one of the finest and most modern Hydro offices in Ontario after the war when further extensions are completed.



MEMBERS OF the staff were hard at work when the Hydro News photographer arrived.

ABOVE IS Frank Dainty who has been with the East York commission for 18 years. He designed and constructed the board at which he is testing meters.

MANY tradesmen and door-to-door salesmen can't understand why they are never able to catch the residents of 30 Fairside Avenue, East York, at home.

Home seekers have made countless inquiries at adjacent homes trying to rent or buy "that cosy looking bungalow on the corner," but without success.

The answer is, of course, that this homelike building is one of the up-to-date Hydro substations constructed along architectural lines which are in keeping with the modern homes in the vicinity.

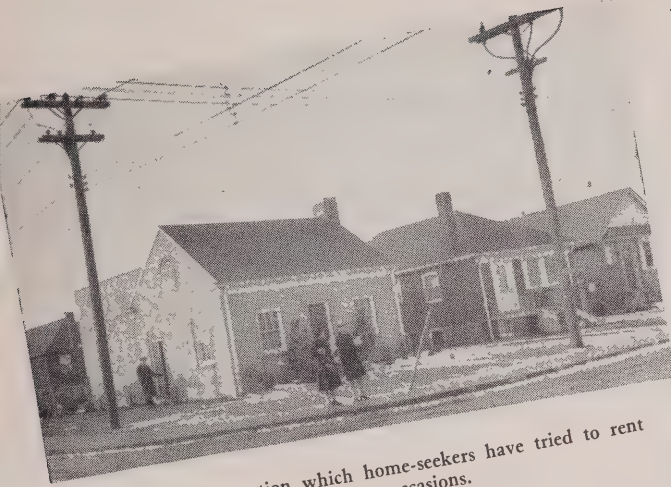
Hidden from view by the extension of the sidewalls of the "house" and screened from the rear by evergreen trees, are the transformers which step down the power from 13,000 volts to serve the consumers of the district.

Furthering the illusion that the building is an ordinary home are the venetian window blinds and the floor lamp type fixtures placed behind them. These lights are automatically turned on at night and off again in the morning by an electric timing device.

This substation, as well as the other five which serve the municipality, is entirely automatic. Superintendent James Wickiam makes the rounds of the stations at least once a week to read the various meters and, usually makes a second call to see that everything is in working order.

Should a tree limb fall across the feeder lines or something else cause a short circuit in the area, circuit breakers





THIS IS the substation which home-seekers have tried to rent on numerous occasions.

immediately operate and cut off the current. Within a few seconds the switches close again and should the "shorting" condition remain the breakers again operate but will not close again until operated manually.

"It would be possible to have these breakers work automatically," said Mr. Wickiam, "but we feel that if there is something wrong which will cause the breakers to open twice, then we should find the trouble and remove it. We don't want to have live wires hanging about our streets possibly endangering the lives of our citizens."

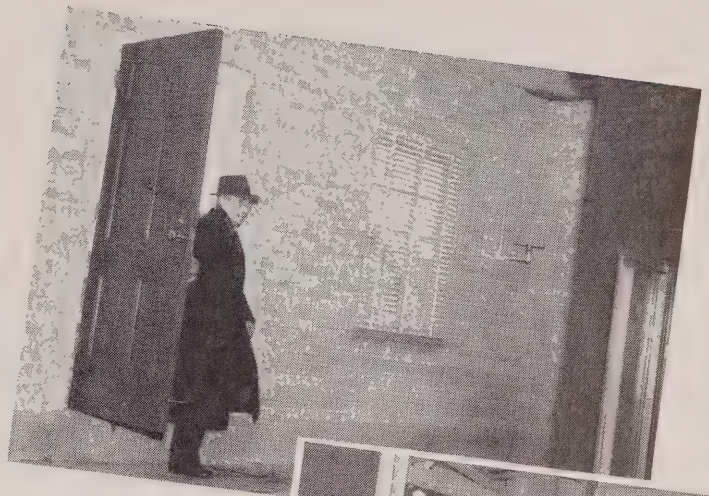
The first official reference to the Township of York of which East York was at one time a part, is to be found in the description of the township given from the Surveyor General's Office to Aitken and Jones, surveyors, on January 26, 1793.

According to the description the township stretched from Scarborough on the east to the Humber river on the west. The first municipal record relates to a meeting of the inhabitants in pursuance of the provisions of an act of the Provincial Legislature passed in 1835, during the fifth year of the reign of His Majesty William the Fourth. The meeting was held in the house of William Cummers, and unanimously appointed James Hervey Price, chairman, who in consequence of "the unfitness of the house for a public meeting" adjourned to the tavern of John Marsh, on Yonge street.

East York formed part of the Township of York until 1923, when they voted in favour of incorporation as a separate municipality and broke away on the first of January, 1924.

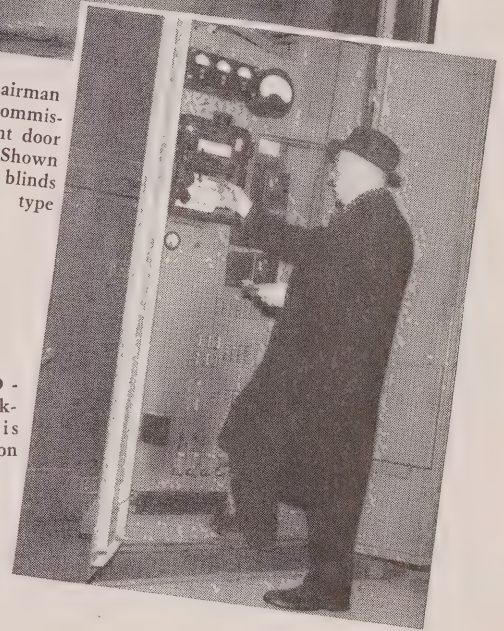
Robert Baker was elected its first reeve, R. H. McGregor, first deputy reeve, J. Galbraith, second deputy reeve, D. McCarthy, third deputy reeve, and H. Chapman, councillor.

Prior to 1927 there was no connecting link between the northwest section of the township and Leaside and North Toronto other than by a roundabout route along Bloor street, through Rosedale, and Mount Pleasant road. In that year the East York-Leaside bridge was completed at a cost of approximately \$1,070,000.



A. G. JENNINGS, chairman of the East York commission, steps in the front door of the substation. Shown also are the venetian blinds and the floor lamp type fixtures.

SUPERINTENDENT James Wickiam makes his regular inspection of the station.



From the time of incorporation until May, 1925, Hydro in East York was administered by the Toronto Hydro Electric System. At this time the first Hydro commission was set up in the Township of East York. While power was purchased directly from the Ontario Commission, it was stepped down by the Toronto system and delivered to the municipality through the Carlaw avenue substation and the Main street substation at 4,400 volts.

Commencing in 1940 the municipality began stepping down its own power directly from Leaside at 13,000 volts and continued building substations until, in 1941, the system was entirely divorced from the Toronto system. This move on the part of the local commission resulted in a saving of approximately \$25,000 per annum.

The members of the first commission who took office following the municipal election in 1926, included A. G. Jennings, P. Walsh, and reeve R. H. McGregor.

Debentures amounting to \$282,067 were issued to cover capital costs, along with an additional \$75,000 for extension costs, making a total of \$357,067. Since that time the debenture debt has been steadily reduced until at the end of January, 1944 it amounted to \$72,877, which the local com-



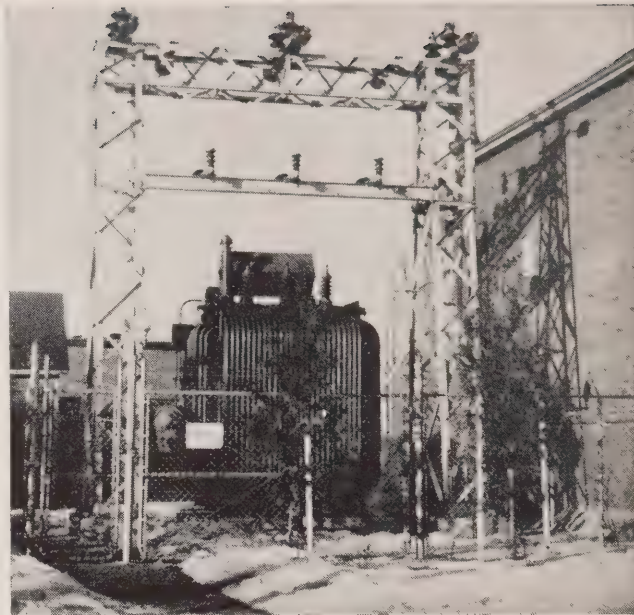
mission is planning to pay off in October, 1945. Debenture payments are scheduled to end in 1950, but by paying them off five years in advance, the local commission will save approximately \$3,565 in interest charges. In addition to reducing this debenture debt, the system repaid to the township \$42,000 borrowed for the purpose of extending the system.

The system has more than tripled its load since its inception in 1926, when its average monthly load was 2,612 horsepower. Today the average monthly load is 7,476 horsepower. At the time of inception there were 5,915 domestic, 129 commercial and 22 industrial consumers, while at present 11,525 domestic, 462 commercial and 43 industrial consumers are served by the system.

The leading industries of this suburban Toronto municipality are the Ford Motor Car Company, Don Valley Paper Company, Insulation Products, Plywoods Limited, Toronto Brick Company, Woburn Chemical Company and Donlands Dairy Limited.

The local commission is now negotiating with the H.E.P.C. for the purchase of the substations which were designed and constructed by the provincial commission at a cost of approximately \$110,000 and, at the present time, the contract only awaits the Commission's approval before becoming effective.

Hydro affairs in East York are now under the direction of A. G. Jennings, chairman; Charles Legg and reeve John Warren, commissioners.



THIS IS one of the open type substations serving East York.



THE LINEMEN were stubbing a pole in the Don Valley when the photographer clicked this one.



## EXPLAINS "MODERN MAGIC" OF DIELECTRIC HEATING

**Provides Means Of Generating Heat Inside A Substance, Charles A. Scarlott Tells A.M.E.U. Delegates**

WHILE induction and dielectric heating have crashed the industrial "big time," Charles A. Scarlott, editor of the Westinghouse Engineer, looks with "a quizzical eye" at those who believe that the housewife will be turning in her present cook stove for dielectric equipment immediately after the war.

Addressing the annual meeting of the A.M.E.U. Mr. Scarlott remarked, "You and I may walk into a restaurant some morning and order a three minute egg, well-done bacon, and light brown toast, and hear the waitress call to the cook, 'One egg, 130 magacycles, six seconds; bacon, 240 megs, 11 seconds; toast, 40 megs, 3 seconds.' On the other hand, I doubt it.

"In the past fourteen months," he continued, "9,100 kilowatts of induction heating equipment has been installed in United States tin-plate mills for the flowing or finishing of electrically deposited tin. This tin flow apparatus, which looks for all the world like broadcast transmitters, is thirty times the total power of all the radio stations in Canada."

### How It Cooks

"In alternating-current heating, either induction or dielectric, we have some modern magic that needs explaining," proceeded Mr. Scarlott. "Firstly, by these methods we can develop heat on the inside of a given material. Secondly, with metals we can generate heat in some specially selected or localized portion and do it so quickly the remainder of the metal stays cool. Thirdly, the internal heating occurs without a mechanical contact with the material. And fourth, the electric apparatus that is the cause of this heating may not even itself get warm.

"The first," the speaker continued, "is the principle of induced current. That is when any electrical conductor, either magnetic or not, is surrounded by a coil carrying an alternating current, corresponding electric currents are set up in the conducting metal itself. These currents, flowing against the electrical resistance of the conducting material cause an energy dissipation in the material. This energy dissipation appears as heat just as a lamp filament becomes white hot by the flow of a current through it."

Mr. Scarlott pointed out that induction worked fine for the heating of materials that were conductors of electricity, but that it would not do for other materials such as plastic, plywood, glue, paper and other things that are poor conductors of electricity. Alternating currents were still used to heat these materials, but in a different manner.

He said that an electrical condenser was made of these materials, consisting of two metal plates or electrodes connected to the alternating-current circuit and that the substance to be heated was placed between. This material being a poor electrical conductor was described by engineers as a dielectric, which gave to this second branch of alternating-current heating its name, dielectric heating.

"When the applied alternating current charges the two electrodes alternately positive and negative an electric field is set up through the material to be heated," Mr. Scarlott continued. "This field reverses direction twice each cycle, and causes a molecular agitation, the resulting friction causing heat. This heat is developed all through the material while the plates themselves remain cool except for what heat they pick up from the dielectric. This heat in power factor correction capacitors is undesirable. Designers of these capacitors sit up nights figuring how to cut down this dielectric heat loss, but one man's meat is another's poison. Dielectric heating engineers base their whole show on this loss in non-conducting materials," he said.

### High Frequencies Used

"One fact to note here is that the faster the current alternates, that is the higher the frequency, the more rapidly internal heat is developed. For this reason, most dielectric heating is done at really high frequencies, generally in the megacycle, or millions of cycles per second class," he stated.

"One thing must be kept clearly in view," he continued, "the use of alternating currents for either induction or dielectric heating is simply a means of getting heat into a substance. There is no mystical benefit from the electrical current. The heat, once it is established in the material, is just the same old burn-your-fingers kind of heat you'd get with a gas flame or a torch.

"The salient feature of induction or dielectric heating is that it is the first time in the history of man that we have a means of generating heat inside a substance, except for electric conduction and the limited and impractical method of heating obtainable by flexing or working the object."

Mr. Scarlott said that the overall power efficiency of either induction or dielectric-heating equipment now ran about 50 per cent. In other words, he explained, about half the energy taken from the power lines showed up as heat in the material. It could reasonably be expected that efficiencies would improve somewhat as apparatus was improved, as there was no theoretical limit, below 100 per cent, to the energy transfer.

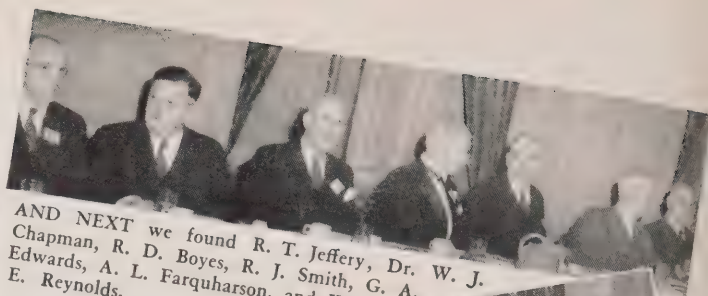


THIS PICTURE was recorded as vote was taken on the "flat rate" proposal presented at the O.M.E.A. annual meeting. The approximate count was 154 to 70 against.

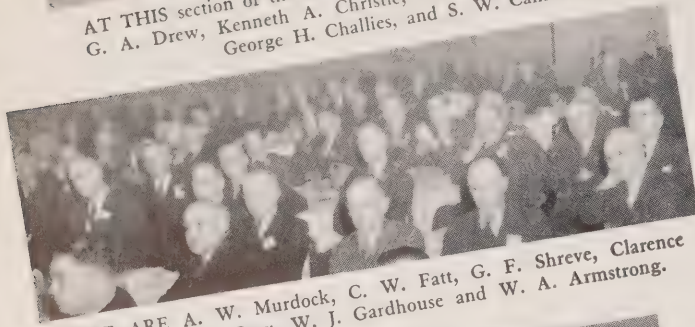




AT THIS section of the head table the camera took in Prime Minister G. A. Drew, Kenneth A. Christie, K.C., Ralph B. Chandler, Hon. George H. Challies, and S. W. Canniff.



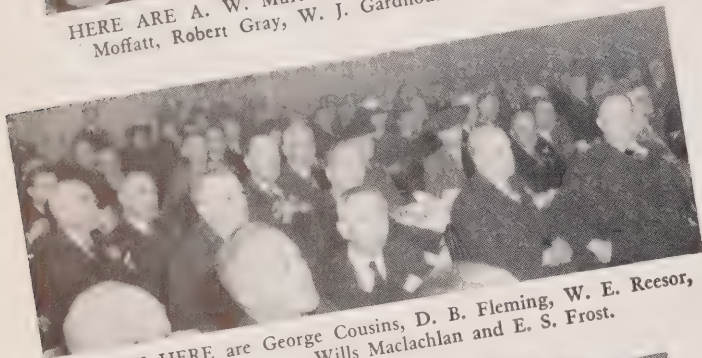
AND NEXT we found R. T. Jeffery, Dr. W. J. Chapman, R. D. Boyes, R. J. Smith, G. A. Edwards, A. L. Farquharson, and W. E. Reynolds.



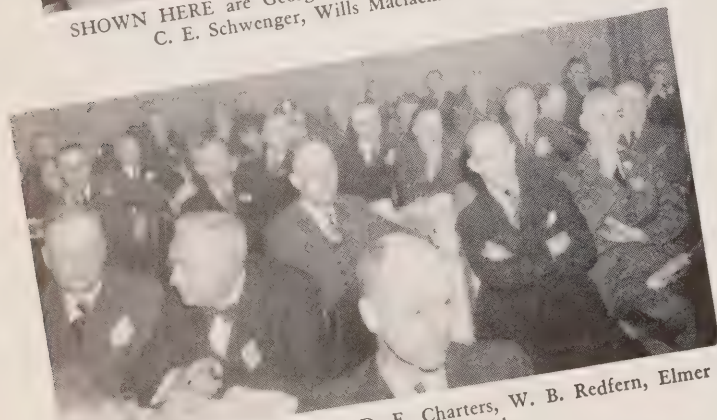
HERE ARE A. W. Murdock, C. W. Fatt, G. F. Shreve, Clarence Moffatt, Robert Gray, W. J. Gardhouse and W. A. Armstrong.



MOVING ALONG the head table the photographer focussed the camera on this group. Among those identified are Keith MacLeod, Albert Jennings and C. H. Moors.



SHOWN HERE are George Cousins, D. B. Fleming, W. E. Reesor, C. E. Schwenger, Wills MacLachlan and E. S. Frost.



THIS PHOTOGRAPH shows D. E. Charters, W. B. Redfern, Elmer Brandon, and R. McGeoch.



WHEN THE photographer turned his camera in this direction he caught A. W. H. Taber and I. K. Sitzler.

## ANNUAL MEETINGS

(Continued from page 4)

He also told his audience that the Commission, for some time, had been considering the possibility of giving some relief to certain municipalities where the average cost of power was relatively high. In this connection, he directed attention to statistics in the 1942 Annual Report which showed that, in that year, the cost of power exceeded \$50 per horsepower to only eleven municipalities. They showed, too, that there were approximately fifty municipalities whose cost was between \$40 and \$50 per horsepower.

In his address, the Hydro chairman also stated that wholesale unit costs of the Commission could not be maintained constant under fluctuating loads and that annual costs per horsepower to partner municipalities could not be maintained without change. "But," he said, "rapid and severe fluctuations in the annual charges made to the municipal partners are minimized by the setting aside and administration of the Commission's contingencies and stabilization reserves."

A resolution, submitted at a session of the O.M.E.A. following Dr. Hogg's address, incorporated a suggestion that the maximum cost of power to municipalities, whose cost exceeded \$39 per horsepower, could be reduced by using annually an amount equivalent to less than ten cents per horsepower from the contingencies and rate stabilization reserves.

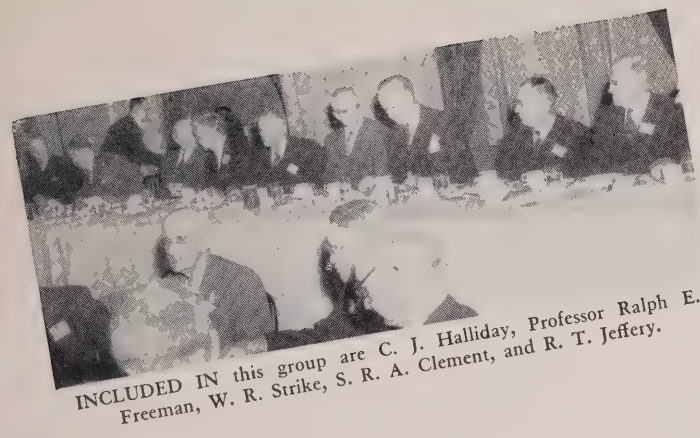
It was pointed out that this suggestion and the figure of \$39 per horsepower were based upon Hydro's costs in the year 1942.

The resolution is now under consideration by the special committee and will be the subject of a report which will be presented at the special meeting of the O.M.E.A.

Another highlight of the O.M.E.A. sessions was the Sarnia Hydro-Commission's "flat rate" proposal which was rejected by a vote of approximately 154 to 70.

In lengthy and ably-presented briefs, R. M. Durnford and J. T. Barnes of the Sarnia Commission, submitted data in support of their contention that a basic rate of \$23 per horsepower could be established.





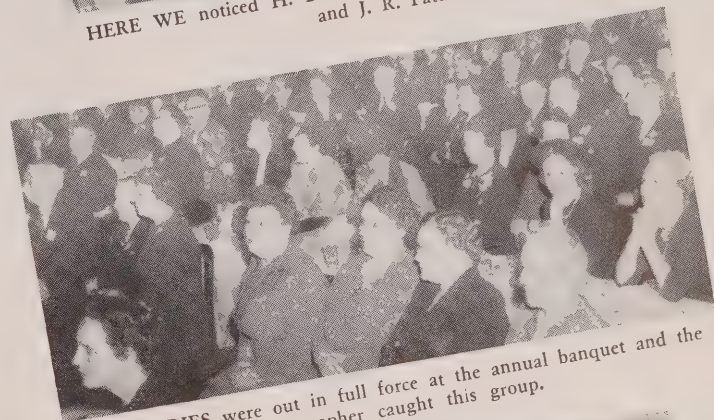
INCLUDED IN this group are C. J. Halliday, Professor Ralph E. Freeman, W. R. Strike, S. R. A. Clement, and R. T. Jeffery.



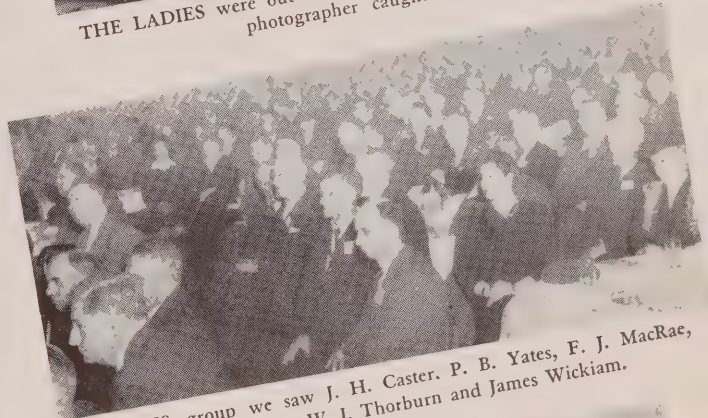
HERE ARE J. B. Hay, Osborne Mitchell, V. A. McKillop, G. S. Mathews, P. R. Locke, Leslie Frost, and Dr. Thomas H. Hogg.



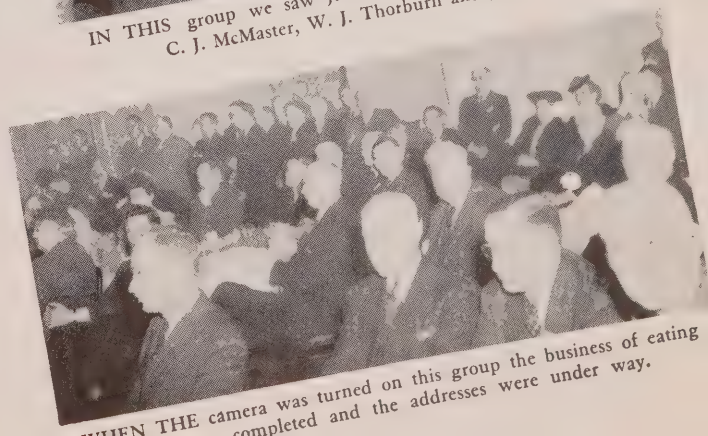
HERE WE noticed H. D. Denison, E. V. Buchanan, C. A. Veigel, and J. R. Pattison.



THE LADIES were out in full force at the annual banquet and the photographer caught this group.



IN THIS group we saw J. H. Caster, P. B. Yates, F. J. MacRae, C. J. McMaster, W. J. Thorburn and James Wickiam.



WHEN THE camera was turned on this group the business of eating completed and the addresses were under way.

When referring to the "flat rate" question in his address before the joint session of the O.M.E.A. and A.M.E.U., Dr. Hogg stated that those who had accepted the idea had assumed that uniform wholesale costs would result in uniform rates to consumers. "That," he said, "is not so."

In the second place, continued the Hydro chairman, those advocating flat rates appeared to assume that the Commission in its co-operative systems sold power at a fixed rate or price as did private companies. "This, also," he said, "is not so. Actually, to the co-operating municipalities, the Commission does not 'sell' power at all, and certainly not at fixed prices. It supplies power at cost, and the unit cost per horsepower may vary each year."

Considerable interest was aroused when J. Knowles, secretary-treasurer and superintendent of the Rosseau Hydro-Electric System, rose to his feet to comment on the "flat rate" proposal. "I am representing a municipality that has had a lot of attention about this \$90 per horsepower," he said at the outset. Continuing, Mr. Knowles declared, "We are satisfied with the rate that we are paying right now and we are not in agreement with this proposal. That might seem funny but the fact of the matter is that we are a long way from the point of distribution and of generation. Now the reason we are paying this big rate is because it is costing that much to get it. We have had it reduced from time to time, and we are now paying \$62 and not \$90, so that we are going down; and I think from what Dr. Hogg said we are going to be lower still. We are satisfied and thankful for any mercies we get."

In the report of the O.M.E.A. post-war committee, it was suggested that the Commission should, as soon as possible, make an analysis of power outlets and be in a position to promote the sale of power as soon as the war is over. At the same time, the report urged that every effort be made to make power available to more farms, and suggested that a joint committee of the O.M.E.A. and A.M.E.U. be set up to plan standardization and procuring of equipment for various purposes.

Another clause stated that improvement of public services, particularly street lighting, should be planned with the help of Hydro engineers and that municipalities be prepared to start these improvements as soon as practicable after the war.

The report also directed attention to new processing in connection with metals and chemicals, and new products





THE ANNUAL dinner was well attended, and on the right are three of the shots snapped by the photographer as he moved around the banquet hall at the close of the dinner.

such as plastics, and suggested that these developments be watched closely by the Commission.

In presenting the organization and publicity report, A. G. Jennings of East York announced that at present there were 202 municipalities on the O.M.E.A. membership roll. He urged that a membership drive be undertaken to bring in all non-member municipalities and that Hydro News be asked to support this drive.

#### New Officers Elected

Officers of the O.M.E.A. for the ensuing year are: president, W. R. Strike, Bowmanville; past president, Kenneth A. Christie, K.C., Toronto; district vice-presidents: No. 1, W. R. Strike, Bowmanville; No. 2, R. D. Boyes, Alliston; No. 3, R. G. Walsh, Port Arthur; No. 4, John A. Leslie, Scarborough Township; No. 5, Roy Pierson, Brantford Township; No. 6, F. H. May, St. Marys; No. 7, J. B. Hay, London; No. 8, G. A. Edwards, Windsor; district directors: No. 1, M. P. Duff, Belleville, and James

Halliday, Kingston; No. 2, R. J. Beaulieu, Penetanguishene, and W. V. Brown, Meaford; No. 3, C. H. Moors and J. R. Pattison, Fort William; No. 4, John Irwin, Brampton, and A. G. Jennings, East York; No. 5, Richard Thomson, Paris, and S. J. Wilson, Beamsville; No. 6, F. E. Welker, St. Jacobs, and George Eifert, Tavistock; No. 7, P. R. Locke, St. Thomas, and H. R. Henderson, Woodstock; No. 8, J. T. Barnes, Sarnia, and A. P. St. Louis, Riverside; secretary-treasurer, Kathleen Ciceri, Guelph.

A.M.E.U. officers elected at the annual meeting are: president, S. W. Canniff, Ottawa; past president, R. B. Chandler, Port Arthur; vice-president, R. J. Smith, Perth; secretary, S. R. A. Clement, H.E.P.C., Toronto; treasurer, F. A. Archer, H.E.P.C., Toronto; directors from the membership at large; A. W. Bradt, Hamilton; R. S. Reynolds, Chatham; O. H. Scott, Belleville; district directors: Niagara, R. J. Sullivan, Woodstock; Central, William Tait, Picton; Georgian Bay, R. S. King, Midland; Eastern, M. W. Rogers, Carleton Place; Northern, A. W. H. Taber, North Bay.



# Presents Post-War Picture

**B**ECAUSE of the widespread interest aroused by the address of Ralph E. Freeman, B.A., M.A., B. Litt. (Oxford), before a joint gathering of O.M.E.A. and A.M.E.U. delegates, Hydro News publishes the following digest of his observations. Professor Freeman, who is head of the Department of Economics and Social Science, Massachusetts Institute of Technology, is recognized as one of the foremost authorities on economics on this continent.

—THE EDITOR.

**I** SHALL make some predictions as to business conditions after the war. These predictions are the views of many economists and business analysts.

Studies of the relationships between economic fluctuations in Canada and United States show that the Canadian economy vibrates in sympathy with that of its southern neighbour. Though fluctuations are milder in Canada, timing is similar. For this reason post-war change may be similar.

Towards the end of 1944, and through most of 1945, there will be a recession arising from the confusion and delay of reconversion. Following this and extending from 1946 to 1949 there will be a period of prosperity based on the replacement of goods used up during the war. I am less inclined to make a definite prediction on happenings after that. I shall try to indicate the chief forces making for expansion and contraction on the industrial system at the end of the forties.

The reconversion slump will come with the fall of Germany. Some shift to civilian production may begin before then; in fact it has already begun in some industries.

If we assume Japan will not be defeated till the spring or summer of 1945, there will be about a year during which

a continuing war demand will sustain one sector of the economy while another will be in transition.

## Reconversion Delays

War industries absorb more than two-thirds of the industrial resources of the United States. A few will be able to begin civilian production without a temporary reduction of output. Among these are public utilities, banking, dairying, textiles, amusements, furniture, paper and shoes. In these lines, there may be some delay caused by labour and materials shortages, and market and distributive outlet disorganization.

Other industries may be divided into two main groups. Those like the automobile industry can rely on a large demand for pre-war type goods. Manufacturers of household appliances and office and farm equipment are in this group. They have the know-how, plants and in many instances equipment for civilian operation. Reconversion delay will be because of the time needed to clear plants of war equipment, re-install peace equipment, re-train workers and re-establish systems of distribution. For companies whose peacetime equipment has been scrapped delay may be considerable.

In the second group is the aircraft industry which must shift to products not formerly made. Producers of ships, non-ferrous metals, and certain chemicals, cannot expect to find buyers for more than a part of their war-time output. Their problem is one of preparing to enter markets in which their experience and present equipment will be of little use. The change will be relatively long and difficult.

Much depends on the method of terminating war contracts and the disposal of government owned plants,



PROFESSOR RALPH E. Freeman (at the microphone) addressing a joint luncheon of the O.M.E.A. and A.M.E.U. delegates. An impression of the gathering in attendance is presented on the right.

machines and inventory. To prevent a scramble for productive facilities some system of reconversion priorities must be established.

### Production and Employment

Even with all government help available general business in the United States will decline 20 per cent and industrial production 30 per cent. In spite of curtailment of working time and the retirement of many women from the labour market, five or six million may be unemployed before the slump ends.

No extreme inflation is to be expected. Stock prices may weaken at the end of the war with Germany, but will recover before the end of the slump. Security markets will anticipate the replacement boom.

Industry will recover under the influence of an exceptional replacement demand for durable goods which may be divided into four types.

Consumers will be short of houses, automobiles, radios, household appliances and similar articles. We are told that replacement sales of household refrigerators will be almost a million units a year for some years after the war.

The Bureau of Business Research of Harvard University reported that the accumulated amounts of industrial maintenance, replacements, and improvements will be substantial.

The requirements of states and municipalities are expected to be large because of the repairs and maintenance that have been postponed during the war.

### Goods for Foreign Rehabilitation

Devastated countries will have accumulated enough shortages to provide a large volume of production and employment for American industry, and still leave a large share of this business for the producers of other countries.

It is calculated that of the one hundred million dollars or more of savings carried over from the war, more than half will be in the possession of individuals. The bulk of these savings are in liquid form. The wartime reduction of consumer debt, already about five billion dollars, has increased the borrowing power of American consumers and, on this credit base, additional buying can be financed.

Some of this money will be used to meet the current living expenses of the unemployed, but those who retain their jobs will be in the market for houses, automobiles, home furnishings and other durable commodities that will have been used up during the war. The boom will not be solely of replacement. Producers of refrigerators expect to sell nearly a million units a year to new families and homes newly wired for electrical appliances.

### Foreign Trade

New products, new types of equipment and new processes call for large capital investment and increased industrial output. Innovations give rise to a demand for many new goods and for the equipment to make them, and hasten the obsolescence of existing goods.

This technological force may be strong enough to overcome the depressive tendencies and convert the replace-



FOUND CHATting with two other delegates was Wills Maclachlan of the H.E.P.C. employees relations department.

ment boom into an extended prosperity. New products will begin to make their influence felt as replacement demand shrinks.

There is a possibility that foreign trade may continue to provide an important stimulus to production long after the boom has subsided.

Much depends upon the kind of international organization developed after the war. If political conditions are favourable, a growing world trade will bring the industries of the United States and Canada into contact with new and larger markets.

World trade is one of the great uncertainties in the long term outlook. Another uncertainty is the future role of government. Some economists say the government should stand ready to throw large sums into the income stream when business is threatened with a major recession.

Economists are pretty well convinced that a major source of economic dislocation is to be found in the tendency for the money saved by the community to lie idle for lack of investment opportunities. There is a need for means to put those idle savings to work, or to counteract their depressive effect by creating and spending an equal amount of newly created money. The government should act as a counterbalancing agency, borrowing from the banks and spending the deposits thus created.

If such a policy should be adopted and be successful, and neither of these events is certain, there would be no serious depression following the replacement boom.

Forecasts of the remote future are of doubtful value. Too many unforeseeable events may occur in the meantime to affect the trends and alter the timing of the turning points.

### Role of Agriculture

Canada will emerge from this war with greatly increased industrial power, with shipyards, airplane and machine tool factories, and plants for making explosives, synthetic rubber and chemicals. She will have increased capacity to produce iron and steel, aluminum and other non-ferrous metals and a new industrial army of men and women workers.

In spite of this industrialization, agriculture will play a more important part in the post-war economic life of Canada than it will in the United States. Because of the greater importance of agriculture in Canada, this sustaining



force will tend to make the reconversion slump less serious here than in the United States.

The agricultural industry will find itself in an over-expanded condition and the depressing effects will be more severe in Canada than in the United States. If the reaction in agriculture begins within less than three years after the war, it will tend to cut short the replacement boom. If it comes later, it will accentuate the depressing influences arising from a contraction of the markets for durable goods.

The effects upon the Canadian economy of the coming depression in agriculture will, of course, be modified if the government takes action to maintain farm prices.

Foreign trade is more important to Canada than to the United States. Therefore, the Dominion has a relatively larger stake in post-war arrangements for the promotion of world trade. What happens in Great Britain and United States will have an extraordinary influence on the course of Canadian business. Some British industrial leaders see a quicker industrial conversion to peace-time production in England than in the United States. British war goods come from smaller individual plants in contrast with America's gigantic mass-production layouts, which obviously are much less flexible for conversion. British war-time manufacturing methods involve a greater percentage of general purpose machines that can be turned to peace-time use. In the reconversion race British industries will get the jump on their American competitors. If these views are correct Canada may, under the stimulus of an expanding British trade, be able to weather the reconversion crisis more easily than her southern neighbour.

The concentration of Canada's foreign trade may be lessened in the post-war period. Great efforts are going to be made to open the markets of South America to receive Canadian goods in greater volume.

The exploitation of Canada's natural resources will give a stimulus to spending greater than either Great Britain or the United States. These possibilities for greater production and employment must certainly be placed on the asset side of the balance sheet of the future.

### Conclusions

We may conclude both the reconversion slump and the replacement boom will be more extreme in the United States than Canada. The greater role of agriculture in the Canadian economy will have a moderating effect, and the influence of foreign trade operating through the British connection will have a similar consequence. We should beware of exaggerating these differences. As pointed out at the beginning, experience indicated an extremely close correlation between business fluctuations in two North American countries.

If my analysis of the economic factors that will be operating on post-war business is approximately correct, it is apparent that a critical period will be reached about the year 1949. To prevent a relapse because of the falling off of replacement demand something new must be added. New spending must be injected into the industrial system to counteract the decrease of replacement spending.

We should plan for this critical period. We should



THERE WAS quite a rush at the registration desk of the A.M.E.U. when the photographer caught this group.

give private enterprise encouragement to develop the technological innovations that will be ready at that time. We should reduce taxes on business profits and get rid of the conditions that discourage initiative and risk taking. We should open up the channels of world trade so as to give economically backward nations a ready access to the products of our industries, and this means opening our own markets, markets for goods as well as for capital. We should accumulate a reservoir of public works if necessary by holding them back during the first three post-war years, so as to have a backlog of public funds to throw into the gap.

On every side we hear talk of post-war planning, and most of the talk is concerned with problems of reconversion. Such matters are immediate and important. They should not be neglected. But the most critical problems lie further ahead, after reconversion has been completed, after many of the war-time deficiencies have been corrected. The emergency that will develop then will tax the adaptive capacity of our economy, it will put private enterprise to a severe test.

One of the prerequisites of successful defense in military operations is to foresee the strategy of the enemy and the timing of his moves. And similar foresight is necessary for a successful defense against the forces of depression.

### NOW PRESUMED DEAD

WALTER LEONARD COGGER, R.C.A.F., a former employee of the H.E.P.C. electrical engineering department, transmission section, who was previously reported missing, is now presumed dead. Mr. Cogger was with the Commission from August, 1940, to July, 1941.

### H. M. KING PASSES

HARRY M. KING, operating superintendent of the Ontario Power plant at Niagara Falls, died recently following a brief illness. Mr. King had been on the staff of the O.P. Co. since 1910, which plant was taken over by the H.E.P.C. in 1917.



### **EAST YORK CHAIRMAN**

A native of London, England, **ALBERT GEORGE JENNINGS**, chairman of the East York Township Hydro-Electric Commission, was born in 1876.



Known as the "father of Hydro in East York," Mr. Jennings has been on the commission since its inception in 1926, having been chairman for thirteen years. Previous to that time he was school trustee for nine years.

While attending school in England, Mr. Jennings took an active interest in such sports as soccer, football and running. Now his principal hobby is fishing.

### **MEET JOHN WARREN**

**JOHN WARREN**, commissioner of East York Township Hydro-Electric Commission was born in Devonshire, England, and received his education in Devon.



Taking a keen interest in municipal affairs, Mr. Warren served as councillor for two years, and as reeve for the past ten years. He was also county commissioner for one term, and this year has been elected warden for York County.

Mr. Warren was a soccer enthusiast in his school days; now he indulges in the more leisurely game of golf.

### **COMMISSIONER AT EAST YORK**

**CHARLES LEGG**, commissioner of East York Township Hydro-Electric Commission for the past three years, was born in Redhill, Surrey, England in 1884. He served as deputy reeve of East York during the years 1926-7 and 8.



Mr. Legg attended public and technical school in Surrey, England, and received his Master Plumber's and Sanitary Engineer's Certificate. He is now a plumbing and heating contractor.

During the last war he served overseas with the Canadian Army Service Corps, and was wounded at Ypres.

When attending school his sport activities included football, soccer and cricket. Now his hobbies are fishing, drawing, fretwork and motoring (as long as the coupons hold out).

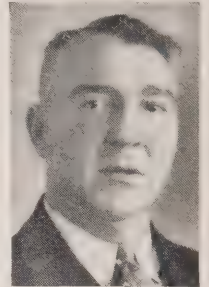
### **EAST YORK SUPERINTENDENT**

**JAMES WICKIAM**, superintendent of the East York Township Hydro-Electric Commission, was born in Scotland in 1899.

Coming to this country at an early age he received his education in Toronto. Mr. Wickiam joined the staff of the Toronto Hydro-Electric System in 1920 as a lineman, and in 1925 he went to East York Hydro Commission. Later he became foreman, and for the past three years has been superintendent.

During the last war he served with the 20th battalion, and is now in the reserve army.

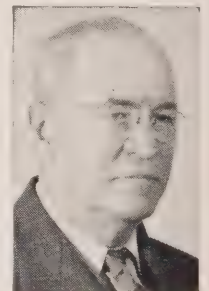
Mr. Wickiam is keenly interested in all sports, but his chief hobby is fishing. He is a member of the Canadian Legion.



### **SECRETARY-TREASURER**

Born in Napier, Ontario, in 1878, **MELVIN A. GOUGH**, has been secretary-treasurer of the East York Township Hydro-Electric Commission for nine years.

While at public school and business college he found time to play baseball and football. Now he pursues the "little white ball" around the golf course.



### **E.O.S. SUPERINTENDENT PASSES**

**GEORGE BARNETT SMITH**, superintendent of the Eastern Ontario system, passed away at his home in Belleville recently.

Born in England, he came to Canada at the age of 9, and attended schools at Port Hope and Stratford. He graduated from McGill University in electrical engineering in 1900, and in mechanical engineering in 1901.

After several years in Montreal, Mr. Smith joined the Ontario firm of Smith, Kerry and Chase, and later became superintendent of the Electric Power Company. This property was taken over by the H.E.P.C. in March, 1916, and "G.B." continued as superintendent until his death.

He is survived by a sister, Mrs. Fred Macklin, Kitchener; and three sons, Cedric M., Chatham; Barnett J., Sault Ste. Marie. and Lieut. J. Oliver (overseas).





## JOHN MILLS "GOES TO BAT" ON "EVERYDAY ELECTRONICS"

**Tells O.M.E.A.-A.M.E.U. Gathering That Common Little Mammal Possesses "Natural Built-in Supersonic Equipment"**

**J**OHN MILLS really "went to bat" when he warmed up to his address on "Everyday Electronics" before a joint luncheon of the Electric Club of Toronto and of the O.M.E.A. and A.M.E.U. delegates recently.

Mr. Mills, who is director of publication, Bell Telephone Laboratories, New York, drew an interesting analogy between one electronic principle and the blind flying of the common little bat. He refuted the popular belief that bats are blind, but explained that their ability to fly in complete darkness as easily as in daylight is due entirely to "natural built-in supersonic equipment" which is capable of detecting sounds unheard by human ears.

Supersonic sounds, the speaker explained, are those that have a frequency above 20,000 vibrations per second which the average human can hear. Bats in flight, he pointed out, emit sounds at a rate of between 30,000 and 70,000 vibrations a second.



**IF YOU** see something like this sweeping through the air, you can bet it is a bat.

The high frequency note which bats emitted when in flight, the speaker pointed out, was reflected back to them by objects in their line of flight. The note produced, he said, was an interrupted sound which enabled them to hear the reflected echo during the short periods of silence. By judging the intensity of the echo, the bats could sense the location of an obstruction. This remarkable sending and receiving equipment, Mr. Mills stated, enabled these mammals to fly at fairly high speed through a maze of wire.

The speaker then went on to describe, in some detail, experiments which had been conducted with these insectivorous mammals to prove this theory. When the bats were placed in a soundproof room, which had been equipped with a supersonic detector, it had been observed that when the creatures were held quietly in the hand, no sounds were recorded. As soon as they began to fly, however, audible beat-notes from high frequency sounds poured forth from the loud speaker.

Mr. Mills next told his audience about another experiment which had been conducted. Steel wires, he stated, were strung vertically from the ceiling to the floor, with a 12-inch path between each pair of wires. By coating their eyes with collodion, the bats were temporarily deprived of their eyesight and it was found that they could dodge between these barriers 75 times out of every 100 trials, without even brushing the obstacles.

Next, the scientists plugged up the animals' ears. At first, it was noticed, the bats were very reluctant to fly, but

### NEW ATTENDANCE RECORD

**O**VER 1,100 delegates, representing both the Ontario Municipal Electric Association and the Association of Municipal Electrical Utilities, attended the recent annual meetings of these groups at the Royal York Hotel, Toronto, on February 8 and 9. This year's attendance, *Hydro News* was informed, marks a new record.

Sessions were conducted under the direction of Kenneth A. Christie, K.C., Toronto, and Ralph B. Chandler, Port Arthur, the retiring presidents of the O.M.E.A. and A.M.E.U. respectively, while a civic welcome was extended by Dr. Fred J. Conboy, Mayor of Toronto.

when forced to take wing, they bumped into walls, collided with wires and finally dropped to the floor. From a score of 25 collisions per 100 trials made by blindfolded bats, the "bating average" for the deafened animals went up to 65.

The next test was to make the bats voiceless, continued Mr. Mills. This was accomplished by covering mouths and lips. The result was that the score of collisions again jumped to 65 per cent.

These experiments definitely proved, Mr. Mills stated, that the bat's blind flying ability depended upon their peculiarly sensitive ears and upon the use of their mouths.

Proceeding, Mr. Mills discussed briefly the scientific background of the modern engineering art of electronics. Research physicists, he said, laid the basis for this art, and prominent in its development were the contributions of Professor J. J. Thomson of Cambridge, England, assisted by his associates and students. On the side of engineering applications, the art was influenced by Lee DeForest's invention of the audion as a mechanism for long distance wire and radio-telephony.

Another application of DeForest's invention, the speaker pointed out, was the vacuum tube amplifier, which was the key mechanism of electronics, and served three main purposes: first, as a distortionless amplifier giving an enlarged output while preserving faithfully the wave form of its input; second, as a generator of high frequency alternating currents; and third, as a modulator and detector of such currents. It performed these three operations in electrical communication systems. Other applications were the X-ray tube, the photoelectric cell, or phototube, and the electron microscope.

Continuing, Mr. Mills said, the vacuum tube and the phototube served a wide range of purposes, including the production of tinplate and plywood; the grading and sorting of products on assembly lines. It also acted as a relay to control motors and regulated manufacturing processes.

The speaker pointed out that the most important developments of electronic devices were the wartime applications.

In closing, he said, it could be safely assumed that these developments would have wide and important peacetime applications.



**F**OOD from home! To the boys in the fighting forces these three words immediately suggest tasty "extras" or "tidbits" that are always welcome. To those who are prisoners-of-war, they may mean the difference between life and death.

There are cases on record which show that men in a weakened condition because of wounds, could not have existed for long on the rations provided in certain German prison camps. It can, therefore, be readily understood why the weekly Red Cross parcels mean so much to our men who are behind enemy barbed wire.

And so, this month, Hydro Home Forum salutes the Red Cross and all who are giving so freely of their time and talent to carry on this great work.

To get a little more information about Red Cross prisoner-of-war parcels, we talked to Wills Maclachlan, who is head of the H.E.P.C. employees relations department and whose voluntary job is that of chairman of the National Purchasing Committee of the Canadian Red Cross.

We learned that one hundred thousand parcels are packed every week by volunteer help at the five Canadian Red Cross depots. Each prisoner-of-war, according to international law, is allowed 11 pounds of food a week from the Red Cross. As a result, every type of food selected must be prepared in its lightest form. For example, Mr. Maclachlan, acting for the Red Cross, buys 51 per cent of all the dry milk made in Canada for prisoner-of-war parcels, and this milk powder is put up in 16-ounce vacuum sealed cans.

Upon making further enquiries, we were advised that Group Captain F. F. Tisdale, one of Canada's leading authorities on nutrition, had named the essential nutritious foods, which go into each box, and that the American Red Cross is now using the same type of foods.

And now, to get the picture a little more clearly in our minds, let us compare the German prison camp rations with those provided in a Red Cross parcel. First, here is the German ration for a full day in a base prison camp; one-seventh of a loaf of black bread; a small portion of jam, made from sugar beet pulp; three potatoes; soup, containing black horse meat; tea and, once a week, one sausage.

A Red Cross parcel contains: whole milk powder, 16 ozs.; butter, 16 ozs.; cheese, 4 ozs.; corned beef, 12 ozs.; pork luncheon meat, 10½ ozs.; salmon, 8 ozs.; Canadian sardines, 4 ozs.; raisins, 7 ozs.; prunes, 6 ozs.; sugar, 8 ozs.; jam, 16 ozs.; biscuits, 16 ozs.; chocolate, 5 ozs.; salt and pepper, 1 oz.; tea, 4 ozs.; soap, 4 ozs. In addition, bulk shipments of vitamin capsules are sent into hospitals and camps, while cigarettes are also shipped in bulk.

It costs \$2.50 to make up and transport each parcel from Canada to a prison camp in Germany or Italy. The average Hydro employee spends that amount of money on his weekly lunches which are tastefully served in congenial surroundings.

Because he has interviewed repatriated Canadian boys, Mr. Maclachlan can tell many stories about the vital contribution these parcels are making to the general morale and welfare of prisoners-of-war. At the prison camps the boxes are opened in the presence of a representative of the men and a German camp official. Each parcel is distributed and the food is pooled in order to make it go farther.

Not only is the food treasured but every piece of wrapping paper is put to good use. Excelsior and cellophane wrappings are used to stuff mattresses and pillows, while string and nails are needed for "fixing things." Heavy wrapping papers are decorated and put up to serve as back drops and sides for theatre scenery. Plywood is often fashioned into picture frames for treasured photographs of mothers and sweethearts. From plywood, too, prisoners-of-war have carved tiny horses for "race meets." Ropes are woven into slippers or floor mats, and tin cans become tea-pots. In fact everything is used—even left-over pieces of wood are collected for firewood which is very scarce in some camps.

In addition to food, the Canadian Red Cross has shipped musical instruments, sufficient for twenty bands, while many technical books have been sent at the request of boys who wish to continue their studies.

In closing, Hydro Home Forum would like to pass along to you a special appeal from Mr. Maclachlan who is rendering such a fine service for the Red Cross. He wishes to remind you that the Red Cross is YOUR organization, carrying out YOUR wishes that everything possible be done to alleviate suffering and provide some comfort for our men who are behind the barbed wire of enemy prison camps. He urges you to contribute all you can during the present campaign.

As you think about the work of the Red Cross, place yourself in the same position as a prisoner-of-war: then look into your heart before you look into your pocketbook.

### WHAT'S NEW?

A spectacular demonstration of something new in food technology was displayed in Canada recently. It was a box of chocolates—the fillings, cream, sugar and flavourings being made from different types of sawdust.

According to Dr. A. W. Cliffe, a noted food chemist, the so-called "sawdust breads" of European countries are very palatable. Paradoxically, they actually contain no sawdust, but the chemicals used in baking were partly developed from sawdust. Dr. Cliffe explains that while the process of obtaining chemicals from various kinds of sawdust is expensive, it is an indication of where we may look for our sugar supplies of the future. Canada, with immense forest resources, would be favourably situated in this respect.



## GROW MORE IN '44

WITH plans for the 1944 season now well under way, victory gardeners will soon be getting down to earth again. Several important meetings are scheduled, and assistance will be given in the purchase of certain necessary supplies.



says  
Percy Parsnip

Announcements will be made concerning iris, rose and flower shows and a victory garden produce display.

Last year Hydro victory gardeners, representing twenty per cent. of the staff, harvested \$48,000 worth of produce. This year's objective is \$75,000. Now is the time to make your own plans—and get the other fellow planning.

MEMBERSHIP FEE will be 50 cents for Toronto members and 25 cents for members outside of Toronto.

VICTORY GARDENS—Over 800 registered last year. The need for vegetables is even greater this year than in 1943.

ALLOTMENTS—The Victory Garden Committee will assist members in finding garden plots and in having ploughing done.

PURCHASING—Members are asked to make their own purchases of seeds. The club has arranged for the purchase of fertilizer in quantity, seed potatoes and mushroom compost.

CATALOGUES for 1944 are being made available through the Library on the 4th floor.

CANNING AND STORAGE—In response to requests of members, these subjects will receive even more attention than last year. Assistance will be given in the organization of groups for co-operative canning.

FOLDERS—Members registering for the first time this year will receive the folders issued last year. All members will receive new and revised sheets.

REGISTRATION—Only members of the Horticultural Section will be accepted as Victory Garden registrants. Membership tickets and registration forms will be in the hands of club representatives in the course of a few days.

## OBJECTIVE OF \$12,900 IS SET BY O.H.E. CLUB

THIS year the Ontario Hydro-Electric Club has set a financial objective of \$12,900, which will be used to carry on the club's war activities, according to P. T. Seibert, the president.

To attain this amount the following quotas have been set: head office subscriptions, \$7,600; dance, bridge, miscellaneous, \$300; field branch, \$5,000.

Since the inauguration of the Consolidated War Services Fund in October, 1940, the club has raised over \$30,000, which has been used to assist recognized service organizations such as the Canadian Red Cross, Salvation Army, Navy League, Canadian Legion and others.

This year the field branch, under the chairmanship of rural superintendent, E. A. Hodgson at Chatham, has been organized to cover all H.E.P.C. employees outside the Toronto area.

The club's executive committee for the ensuing year comprises: honorary president, T. H. Hogg, D. Eng.; honorary vice-president, Hon. G. H. Challies, Phm.B., M.L.A.; past president, R. M. Laurie; president, P. T. Seibert; vice-president, R. E. Brown; general secretary, H. C. Davies; recording secretary, Miss E. H. Allen; treasurer, W. J. Greves; ladies' auxiliary, Mrs. Kathleen Stockwell; ladies' representative, Miss Phyllis Foreman; Strachan avenue representative, W. L. Dymond; soldiers' comforts, A. W. Murdoch; Club News, R. E. Taylor.

## ARCHIE McBRIDE PASSES SUDDENLY

Archie Campbell McBride, aged 50 years, formerly on the staff of the H.E.P.C. accounting department, power billing section, died recently after being ill only a few hours.

A native of Claude, Peel county, Mr. McBride was of United Empire Loyalist stock, and spent his boyhood in Brampton.

Enlisting with the 48th Highlanders, 15th Battalion, in August, 1914, he went overseas with the first contingent. He was gassed and taken prisoner at the second battle of Ypres and spent the greater part of his imprisonment in the salt mines.

He returned to Canada in 1919 and shortly after became identified with The Hydro-Electric Power Commission of Ontario, where he remained as an accountant until his death.

Surviving are his widow, Etta Charlton McBride; and two sons, Charlie of Los Angeles, California, and Ivan of Toronto.

## SERVED ON HARRISTON COMMISSION

JOSEPH J. PRITCHARD, who has been a member of the Harriston Hydro-Electric Commission for ten years, did not stand for re-election owing to failing health, Hydro News was informed. Mr. Pritchard served a number of years as chairman of the local commission.

**H**AD Hydro power been available 2,500 years ago, it would have made quite a difference at the party thrown by Sennacherib, King of Syria, to celebrate a successful Asiatic "blitz." If he could return to the earthly scene today, His Majesty, no doubt, would be quite bewildered to discover that illumination can be provided at the touch of a switch. He might even experience a keen sense of frustration upon learning about Hydro long-life lamps. The best he could do to "lighten the way" in his time was to "persuade" captive females to hold aloft bound torches.

An artist's conception of the "lighting effects," the "glamour" and the "food rations" at the triumphal banquet staged by the Syrian ruler is shown on the left.



## PROCEEDS FROM LADIES' BRIDGE ON APRIL 1 WILL HELP MAINTAIN VITAL WAR SERVICE

**A** JUMPER knitted by a member of the Ladies' Auxiliary of the Ontario Hydro-Electric Club is being worn by the 4-year-old British war orphan who is shown in the accompanying illustration with her brother.

Both children are at the National Home and Orphanage in England. Their father, who was on a submarine which was torpedoed on the opening day of hostilities, is believed to have been the first casualty of the war.



To carry on the work of supplying knitted and sewn articles to this orphanage, as well as to the Red Cross Society, Salvation Army and other organizations, the Ladies' Auxiliary raises the necessary money through the annual bridge and other events.

This year's bridge, Phyllis Foreman, the convener, told Hydro News, will take place at Mal-

loney's Gallery, 66 Grenville Street, on Saturday afternoon, April 1.

Enlisting the co-operation of all lady members of the O.H.E. club, she stated that there will be a prize for each table, as well as twelve lucky number prizes, while refreshments will be served during the afternoon.

One of the highlights will be a Re-make Revue sponsored by the Wartime Prices and Trade Board, and presented by Mrs. Kate Aitken. This revue shows you how to re-make old clothes into stunning creations. The following members of the O.H.E. bridge committee will act as models: Mary Jane Oulahen, Mary Snailham, Nancy Watt, Dorothy Patten and Doris Williamson.

Other members of this committee are: Phyllis Foreman, convener; Margaret Gahagan, secretary; Helen Dunlop, treasurer; Bruce Irvine, Lois Brittain, Margaret Leworthy, Fern Walker, Rhoda Browne, Dorothy Fromow, and Muriel Hamby.

At the fashion show a demonstration will be given on how to create new modes in ladies' afternoon dresses, lounging pyjamas and negligés from pre-war evening frocks; suits from men's tuxedos, tweeds and herringbones; sport coats from men's top coats; children's clothes from sailors' old uniforms; and all types of summer sport togs.

Another interesting feature will be a war work display of the Ladies' Auxiliary, which will include knitted and sewn garments, as well as afghans and quilts.



## DR. HOGG'S APPOINTMENT MERITED SAYS CHANDLER

Call To Serve On United Nations' P.U.C. Also Seen  
As Tribute To Profession

**A**PPOINTMENT of Dr. Thomas H. Hogg to represent Canada on the Public Utilities Committee of the United Nations was not only well merited but it was a tribute to the engineering profession in Canada.

This observation was made by Ralph B. Chandler, of Port Arthur, in his presidential address at the annual meeting of the Association of Municipal Electrical Utilities.

In reviewing the work of the past year, he declared that the members of the association had striven to interpret wisely and fairly the many regulations and restrictions brought on by the emergency of war, and declared that it was most gratifying to note that the general public had come to realize that this had afforded them an opportunity to serve rather than a time for recriminations.

Mr. Chandler declared that the association had made an outstanding contribution to the war effort of the Dominion, and referred to the amicable relationship existing between the executive of his association and that of the O.M.E.A. He also said that the dealings of his association with the H.E.P.C. had been most cordial in furthering the welfare of Ontario's great public ownership enterprise.

## CLARIFIES FUNCTIONS OF TWO ASSOCIATIONS

Some misunderstanding as to the identity and function of the O.M.E.A. and the A.M.E.U. apparently exists according to a statement made by S. R. A. Clement, secretary of the latter association.

"There seems to be an impression in some Hydro municipalities that membership in one association automatically entitles delegates to membership in the other association," he said.

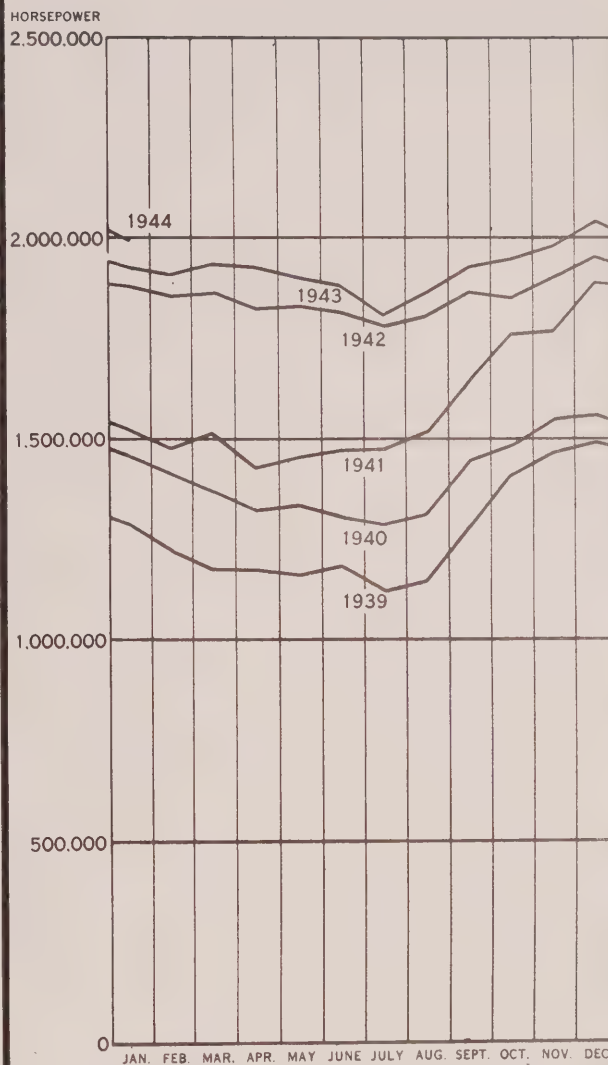
He also drew attention to the affiliation agreement of the two associations drawn up in 1925, part of which is quoted for the guidance of those interested in either association.

The clauses quoted are: "Each association will continue to retain its own identity, elect its own officers and supervise its own finances, according to its constitution and by-laws.

"Each association will continue to hold separate meetings for the purpose of discussing subjects peculiar to itself, joining together at the annual meeting and at other times when feasible in joint sessions, when matters of mutual advantage are to be considered.

"All matters of engineering and operation shall be dealt with directly by the Association of Municipal Electrical utilities, but questions of policy and legislation shall be referred to the Ontario Municipal Electric Association."

### SOUTHERN ONTARIO SYSTEMS NIAGARA — GEORGIAN BAY — EASTERN ONTARIO PRIMARY LOAD



#### PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	JAN. 1944	JAN. 1943	
SOUTHERN ONTARIO SYSTEMS	1,996,663	1,928,701	+ 3.5
THUNDER BAY SYSTEM	106,702	106,702	+ 0.0
NORTHERN ONTARIO PROPERTIES	210,040	213,208	- 1.5
TOTAL	2,313,405	2,248,611	+ 2.9

#### PRIMARY AND SECONDARY LOADS

SOUTHERN ONTARIO SYSTEMS	2,114,311	1,987,548	+ 6.4
THUNDER BAY SYSTEM	123,660	117,962	+ 4.8
NORTHERN ONTARIO PROPERTIES	213,030	254,763	- 16.4
TOTAL	2,451,001	2,360,273	+ 3.8

# MUNICIPAL LOADS, DECEMBER, 1943

## NIAGARA SYSTEM (25-Cycle)

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Acton	1,607	1,903	Erie Beach	13	21	Palmerston	606	1,400
Agincourt	204	P.V.	Essex	620	1,886	Paris	2,118	4,604
Ailsa Craig	129	487	Etobicoke Twp.	8,774	V.A.	Parkhill	190	1,029
Alvinston	117	649	Exeter	749	1,654	Petrolia	1,095	2,768
Amherstburg	856	2,704	Fergus	1,209	2,759	Plattsville	141	P.V.
Ancaster Twp.	439	V.A.	Fonthill	195	860	Point Edward	1,726	1,199
Arkona	55	403	Forest	566	1,562	Port Colborne	2,591	6,928
Aurora	1,369	2,821	Forest Hill	7,819	12,172	Port Credit	994	1,934
Aylmer	805	1,985	Galt	11,982	15,126	Port Dalhousie	856	1,599
Ayr	204	760	Georgetown	1,754	2,452	Port Dover	471	1,790
Baden	544	P.V.	Glencoe	193	763	Port Rowan	114	700
Beachville	674	P.V.	Goderich	1,677	4,674	Port Stanley	327	824
Beamsville	452	1,227	Granton	75	P.V.	Preston	4,265	6,656
Belle River	207	836	Grimsby	817	1,988	Princeton	118	P.V.
Blenheim	586	1,873	Guelph	11,953	23,074	Queenston	111	P.V.
Blyth	111	662	Hagersville	923	1,524	Richmond Hill	492	1,295
Bolton	197	629	Harriston	429	1,292	Ridgetown	638	1,986
Bothwell	129	683	Harrow	491	1,092	Riverside	1,258	5,235
Brampton	2,538	6,157	Hensall	214	686	Rockwood	123	P.V.
Brantford	22,302	31,622	Hespeler	2,810	2,938	Rodney	153	758
Brantford Twp.	1,259	V.A.	Highgate	113	322	St. Clair Beach	87	138
Bridgeport	157	P.V.	Humberstone	609	2,831	St. George	156	P.V.
Brigden	83	P.V.	Ingersoll	3,369	5,757	St. Jacobs	364	P.V.
Brussels	143	784	Jarvis	181	513	St. Marys	1,515	4,009
Burford	214	P.V.	Kingsville	691	2,453	St. Thomas	7,935	17,045
Burgessville	40	P.V.	Kitchener	27,462	35,456	Sarnia	11,320	18,599
Burlington	1,609	3,925	Lambeth	138	P.V.	Scarborough Twp.	5,036	V.A.
Burlington Beach	430	1,474	LaSalle	252	907	Seaforth	750	1,782
Caledonia	358	1,430	Leamington	1,698	6,048	Simcoe	2,713	6,340
Campbellville	42	P.V.	Listowel	1,342	2,984	Smithville	196	P.V.
Cayuga	132	700	London	40,957	77,105	Springfield	75	382
Chatham	7,095	17,184	London Twp.	627	V.A.	Stamford Twp.	3,039	8,275
Chippawa	364	1,228	Long Branch	1,374	4,258	Stoney Creek	263	933
Clifford	107	491	Lucan	190	643	Stouffville	270	1,198
Clinton	615	1,879	Lynden	107	P.V.	Stratford	7,162	17,163
Comber	162	P.V.	Markham	342	1,175	Strathroy	1,485	2,834
Cottam	85	P.V.	Merlin	93	P.V.	Streetsville	205	701
Courtright	52	355	Merritton	12,144	2,916	Sutton	168	949
Dashwood	100	P.V.	Milton	1,559	1,915	Swansea	3,319	6,907
Delaware	67	P.V.	Milverton	374	994	Tavistock	627	1,080
Delhi	703	2,430	Mimico	2,811	3,354	Tecumseh	404	2,331
Dorchester	105	P.V.	Mitchell	741	1,670	Thamesford	205	P.V.
Drayton	146	528	Moorefield	43	P.V.	Thamesville	218	816
Dresden	493	1,525	Mount Brydges	96	P.V.	Thedford	111	598
Drumbo	89	P.V.	Newbury	33	288	Thorndale	73	P.V.
Dublin	63	P.V.	New Hamburg	599	1,441	Thorold	2,867	5,284
Dundas	3,166	5,245	Newmarket	1,719	3,800	Tilbury	1,574	1,923
Dunnville	1,374	3,916	New Toronto	12,320	9,469	Tillsonburg	1,407	4,602
Dutton	247	830	Niagara Falls	10,609	20,371	Toronto	377,179	657,612
East York Twp.	9,502	41,578	Niagara-on-the-Lake	718	1,764	Toronto Twp.	3,150	V.A.
Elmira	1,175	2,069	North York Twp.	11,630	V.A.	Wallaceburg	4,217	4,802
Elora	426	1,185	Norwich	409	1,301	Wardsville	38	221
Embro	148	420	Oil Springs	185	541	Waterdown	272	867
Erieau	83	281	Otterville	96	P.V.	Waterford	453	1,294
						Waterloo	5,701	8,968
						Watford	385	1,023



## MUNICIPAL LOADS, DECEMBER, 1943

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Welland	11,217	14,899	Neustadt	46	431	Lakefield	469	1,301
Wellesley	109	P.V.	Orangeville	720	2,558	Lanark	85	686
West Lorne	240	768	Owen Sound	5,933	13,559	Lancaster	50	570
Weston	4,892	6,333	Paisley	120	530	Lindsay	3,654	8,345
Wheatley	200	761	Penetanguishene	1,028	4,177	Madoc	207	1,130
Windsor	55,342	118,040	Port Carling	121	520	Marmora	142	1,004
Woodbridge	595	946	Port Elgin	456	1,415	Martintown	43	P.V.
Woodstock	8,632	12,339	Port McNicoll	104	950	Maxville	114	811
Wyoming	77	538	Port Perry	273	1,175	Millbrook	94	749
York Twp.	22,296	77,175	Priceville	10	P.V.	Morrisburg	287	1,484
Zurich	118	P.V.	Ripley	121	420	Napanee	1,278	3,241
(25 and 66-2/3 Cycle)			Rosseau	24	305	Newcastle	161	701
Hamilton	160,472	164,719	Shelburne	244	1,053	Norwood	151	710
St. Catharines	32,391	34,541	Southampton	544	1,467	Omeme	188	630
Trafalgar Twp.	551	V.A.	Stayner	259	1,106	Orono	95	P.V.
(66-2/3 Cycle)			Sunderland	73	P.V.	Oshawa	18,385	26,610
Bronte	176	P.V.	Tara	116	510	Ottawa	38,822	150,861
Oakville	1,301	3,369	Teeswater	150	873	Perth	1,743	4,197
GEORGIAN BAY SYSTEM			Thornton	38	P.V.	Peterborough	12,552	24,977
(60-Cycle)			Tottenham	85	532	Pictou	1,182	3,400
Alliston	416	1,700	Uxbridge	323	1,480	Port Hope	2,400	4,997
Arthur	161	1,089	Victoria Harbour	86	979	Prescott	1,363	3,318
Bala	136	355	Walkerton	946	2,534	Richmond	61	428
Barrie	4,068	355	Waubushene	87	P.V.	Russell	71	P.V.
Beaverton	193	941	Warton	272	1,750	Smiths Falls	2,913	7,741
Beeton	160	617	Windermere	24	117	Stirling	305	947
Bradford	168	1,041	Wingham	682	2,149	Trenton	4,773	8,183
Brechen	50	P.V.	Woodville	74	439	Tweed	263	1,181
Cannington	165	761	EASTERN ONTARIO SYSTEM			Warkworth	70	P.V.
Chatsworth	83	333	(60-Cycle)			Wellington	203	948
Chesley	576	1,812	Alexandria	206	1,976	Westport	99	725
Coldwater	141	545	Apple Hill	51	P.V.	Whitby	1,377	4,236
Collingwood	2,688	6,249	Arnprior	1,291	4,019	Williamsburg	89	P.V.
Cookstown	93	P.V.	Athens	105	626	Winchester	310	1,017
Creemore	136	661	Bath	39	325	THUNDER BAY SYSTEM		
Dundalk	235	686	Belleville	7,482	15,498	(60-Cycle)		
Durham	363	1,874	Bloomfield	100	636	Fort William	18,071	30,370
Elmvale	172	P.V.	Bowmanville	2,993	3,850	Nipigon Twp.	249	V.A.
Elmwood	69	P.V.	Brighton	509	1,462	Port Arthur	22,307	24,217
Flesherton	65	452	Brockville	4,717	10,576	NORTHERN ONTARIO		
Grand Valley	148	645	Cardinal	274	1,602	PROPERTIES		
Gravenhurst	1,168	2,261	Carleton Place	1,758	4,143	Nipissing District		
Hanover	1,326	3,190	Chesterville	292	1,094	(60-Cycle)		
Holstein	20	P.V.	Cobden	107	643	North Bay	4,813	16,013
Huntsville	1,223	2,943	Cobourg	2,214	5,907	Patricia District		
Kincardine	700	2,483	Colborne	244	960	(60-Cycle)		
Kirkfield	25	P.V.	Deseronto	236	1,002	Sioux Lookout	313	1,967
Lucknow	446	856	Finch	91	396	Sudbury District		
Markdale	181	776	Frankford	139	1,095	(60-Cycle)		
Meaford	764	2,759	Hastings	107	823	Capreol	264	1,660
Midland	4,655	6,764	Havelock	153	1,103	Sudbury	10,186	35,812
Mildmay	148	764	Iroquois	224	1,123			
Mount Forest	508	1,936	Kemptville	369	1,230			
			Kingston	14,350	29,545			



# HYDRO *Lightens* The Way

● In the operating room, under a shadowless flood of light, surgeons perform miracles with the help of Hydro. Sensitive electric cutting instruments are used in many delicate operations. Elsewhere, it powers the X-ray and therapy machines. It protects nurseries from air-borne germ infection. It conditions the air, runs the elevators, pumps the water. And these are but a few of the many ways in which electricity serves.

Hospitals provide an outstanding example of the benefits derived from 24-hour Hydro service. Indeed, without the ever-present aid of electricity, there could be no modern hospital. With its help . . . surgery and medicine discover new ways and means to fight and control disease and illness . . . industry creates new and better products for the progress and welfare of mankind.

Just as the doctor relies on electricity to aid him in healing the sick, so we, in our everyday life depend on it to assist in performing many of our daily tasks. No matter where we live . . . be it city or farm . . . we can look forward to even better living in the days to come, by planning now to enjoy more of the benefits that electricity can bring.



# HYDRO! News

COMING MARY?

HEAR I AM FOLKS!

FOR THE EASTER PARADE!

APR 6 1944  
HYDRO CHICKS





# The HEART of HYDRO

● Hydro is a living thing. It takes people . . . their hands and brains and hearts . . . to keep Ontario supplied with power in uninterrupted flow.

Producing power for Ontario's needs is Hydro's number one job. A veritable army of men is required to keep this power flowing at peak efficiency. For Hydro is much more than mighty power plants . . . much more than the transmission lines you see striding through the countryside.

Hydro is the employees who keep the power plants producing, who guide and co-ordinate the constant flow of energy through the transformer stations. It is the employees who patrol the lines that carry power to far-off mills and mines, to roaring industrial plants, busy stores and offices, comfortable homes, peaceful farms.

Hydro is the families of those employees who have set up their homes in city and town and country . . . and, perchance, deep in the isolation of wilderness and forest.

It is these . . . and all the other co-operative men and women employees . . . who have put life into Hydro, made it a living organization devoted to the benefit and service of Ontario.

Just now their efforts are directed mainly to producing power for victory and essential uses, but, after the war, they will be ready again to provide the full peace-time service so essential to the development and progress of this province.

Yes! The heart of Hydro is people . . . employees and consumers alike . . . both necessary . . . both partners in a great public enterprise. For today . . . as in the past, and in the future . . . the success of Hydro is dependent on both the faithful service of the employee and the wholehearted support of the consumer.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

**ELECTRICITY  
IS A  
WAR WEAPON  
*Save it!***





## THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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•  
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•  
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### The Front Cover



THIS month's front cover, entitled "Hydro Chicks," would suggest that "Mary" had been a little tardy in making her appearance for the Easter Parade. However, she turned out to be "a good egg" and all was well. The photographs were taken at Marshall's Five Star Hatchery at Kettleby, where Hydro power is vital to the production of hundreds of thousands of chicks every year.

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April 1944

Number 4

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# "NOW'S THE DAY AND NOW'S THE HOUR"

**W**HEN the all-out assault is launched upon Western Europe, thousands of our Canadian boys will be taking part. Many will not return.

This is, therefore, a time for sober contemplation. It is difficult for us at home to know what it really means to crawl like animals into a hostile coast as all hell seems to break loose, but it is our duty to ask ourselves if any sacrifice we may make in the way of money can match the sacrifices in life and limb which thousands in the armed forces will make before this thing is all over.

Taxes we are called upon to pay—and few find it easy to pay them—should be regarded as an objective which must be overcome and not as an obstacle which will stand in the way of our purchase of more Victory Bonds.

This month, Canada's Sixth Victory Loan will be launched. The dollars you lend mean more than an investment in victory; they mean the resurrection of blighted peoples and, from the business point of view, a post-war endowment for yourselves.

I feel confident that members of the great Hydro family throughout Ontario can be counted upon to do their full share in putting victory first at this momentous and historical hour in our history.

*J. H. Noyes*



## \* *Page Three* \*

### HYDRO AMBASSADORS

**W**ITHIN a span of twenty odd years, Hydro has steadily reached out across Ontario to bring the benefits and conveniences enjoyed by urban consumers within the reach of 140,000 rural consumers.

The magnitude and importance of this undertaking can be readily understood when it is remembered that, to date, over 20,000 miles of transmission line have been constructed in rural Ontario, and that it now represents an investment of forty million dollars.

A further impetus to the onward march of Hydro into the rural regions has been provided by the introduction of uniform rates and the marshalling of the 120 Rural Power Districts into one provincial rural power system.

This amalgamation of districts does not mean the closing down of Hydro's rural offices. The essential benefit will be found in the ironing out of inequalities, and in the simplification of accounting and other operations.

The men who serve Hydro in these rural areas—the district superintendents—will carry on their all-important tasks of aiding and serving the rural consumers.

In this issue of Hydro News, attention is directed to these Hydro ambassadors who have made a noteworthy contribution to the growth of Hydro in rural Ontario.

\* \* \*

### SPRING FEVER

**S**TRANGE but traditional impulses revealed by perfectly sane and normal human beings at this season are usually attributed to "Spring Fever."

It is a season when Nature breaks free from the cold shackles of Winter and bounds forth in rousing ecstasy to adorn herself in a new and colourful raiment of green. In the exhilaration of her new-found freedom, she seems to capture the heart and soul of man and, with impish glee, lures him on to the sodden ground of his garden. Once outside, he is completely under her spell. Disregarding the cool breeze, which playfully ruffles his hair, he will stand with shirt sleeves rolled up and puff at his pipe.

Through the curling smoke rings, new and monumental achievements take shape as he recalls colour photographs of velvety lawns, trim hedges, symmetrical borders and weedless rows of vegetables he has been studying in dazzling seed catalogues.

Spring Fever is a great driving force, and this year, it assumes an even more vital significance. In England, where the pale yellow heads of the primroses are nodding in the fields, great, well-trained and well-equipped armies stand ready to invade Europe. For many of these men, this will be their last Spring.

For subjugated peoples in Europe, this Spring comes to bring new hope and a promise that their freedom will not be long delayed.

To the members of the Hydro family throughout this province, Spring comes to sound a clarion call to maintain the tempo of Hydro's all-out effort to hasten the day of victory.

To the Hydro Victory Gardeners, Spring comes with the reminder that this year the harvest must be doubled.

Let us all roll up our sleeves and DIG IN.

\* \* \*

### SERVICE BEYOND PRICE

**T**HROUGHOUT Ontario there are many Hydro employees who are giving blood donations regularly to the Canadian Red Cross.

This is a service which cannot be appraised in the terms of dollars and cents. It is beyond price. The reward for rendering such a service is to be found in the knowledge that these "gifts" are making it possible to save the lives of many of our fighting men who are wounded in action.

Surely, no one could ask for a greater reward.

In this issue of Hydro News, the article entitled "It's In The Fight," directs attention to the voluntary blood donations which are being given by members of the Ontario Hydro-Electric Club.

This timely feature emphasizes the need for more and more blood as the United Nations stand poised for the all-out assault upon Hitler's western bastions.



**I**T wasn't exactly a hen party, for they were only helpless little bits of fluff. But—there was plenty of chatter!

Actually it was a "blessed event" which Hydro News witnessed at Marshall's Five Star Hatchery at Kettleby. Hydro in this case acted in the role of the proud mother.

More than twenty thousand "little ones" arrived on the scene that day! Imagine how busy the stork would have been if he had been called upon to make the deliveries!

It would seem that it takes more than fine feathers to make fine birds. In the case of these chicks, for instance, incubators and hatchers, aided by Hydro power, did a very fine job.

Hatching chicks, according to Ray Marshall, owner and general manager of the poultry plant, is similar to operating a modern hospital. There are day shifts, night shifts, temperatures taken at regular intervals, charts, washing, cleaning and fumigating. Generally speaking, a hospital patient is carried in and walks out and, in the case of the hatchery, the eggs are carried in and, with three weeks' good nursing, the baby chicks are usually able to either walk or fly out.

#### Mass Production

The advance of modern incubation with the resultant mass production of baby chicks, in a comparatively small space has only been made possible by the use of electricity, as it has proved to be the most practical way of maintaining uniform heat and circulating air—two fundamentals in the poultry industry. For this particular air-conditioned hatchery, Hydro supplies approximately 40 horsepower, which in turn, operates the motors and circulation fans in the incubators and hatchers. Energy is supplied direct from the H.E.P.C.

The customary procedure followed each week at this plant is that about 75,000 carefully chosen eggs are cleaned

and checked for weight, cracks and shell texture. These are put in wire racks, small end down, and labelled as to breed, grade and date of hatch. After this they are put in electrically heated and thermostatically controlled incubators and left there for nineteen days. During this time the temperature must be maintained at 100 degrees Fahrenheit and the humidity at 83 degrees. Any deviation from these limits, even to a tenth of one degree would throw the hatch out one day, or might mean mass annihilation of the unhatched chicks, which would not only retard food production which is such a vital part of our war effort, but would also involve a loss of thousands of dollars. During the incubation period it is necessary to turn the eggs, just as the mother hen does. This is accomplished by swinging the trays of eggs, every six hours, to a 45 degree angle. A process which enables the embryo to grow naturally and prevents sticking to the shell.

#### Specially Designed Machines

After the nineteen day interval, with uniform electrically controlled heat, proper circulation and humidity, the eggs are taken out of the incubators, examined, and the infertile ones removed. The remaining, or fertile, eggs are then placed in specially designed hatching machines. The hatcher differs from the incubator in that the temperature in the former is lowered one degree and the humidity is raised approximately 10 to 12 degrees and, in order that the chicks can hatch normally, the trays of eggs are placed at right angles. These machines are so constructed that they can be completely dismantled and thoroughly cleaned and disinfected after every hatch, which, incidentally, is twice a week at exactly the same hour.

When the hatch is off and the chicks, with little dignity or decorum, scramble out of their shells, they are immedi-

*(Continued on page 22)*





IN THIS illustration are shown wire racks of eggs which have been labelled as to breed, grade and date of hatch, just before they were put in the electric incubator.



HERE RAY MARSHALL, owner of the hatchery, turns the eggs while they are in the incubator.



THESE ARE not refrigerators, but a row of electrically heated and thermostatically controlled incubators in which the temperature during incubation must be maintained at 100 degrees Fahrenheit.



HERE THE baby chicks are graded, counted and boxed, one hundred to a carton, and then rushed to the buyers.



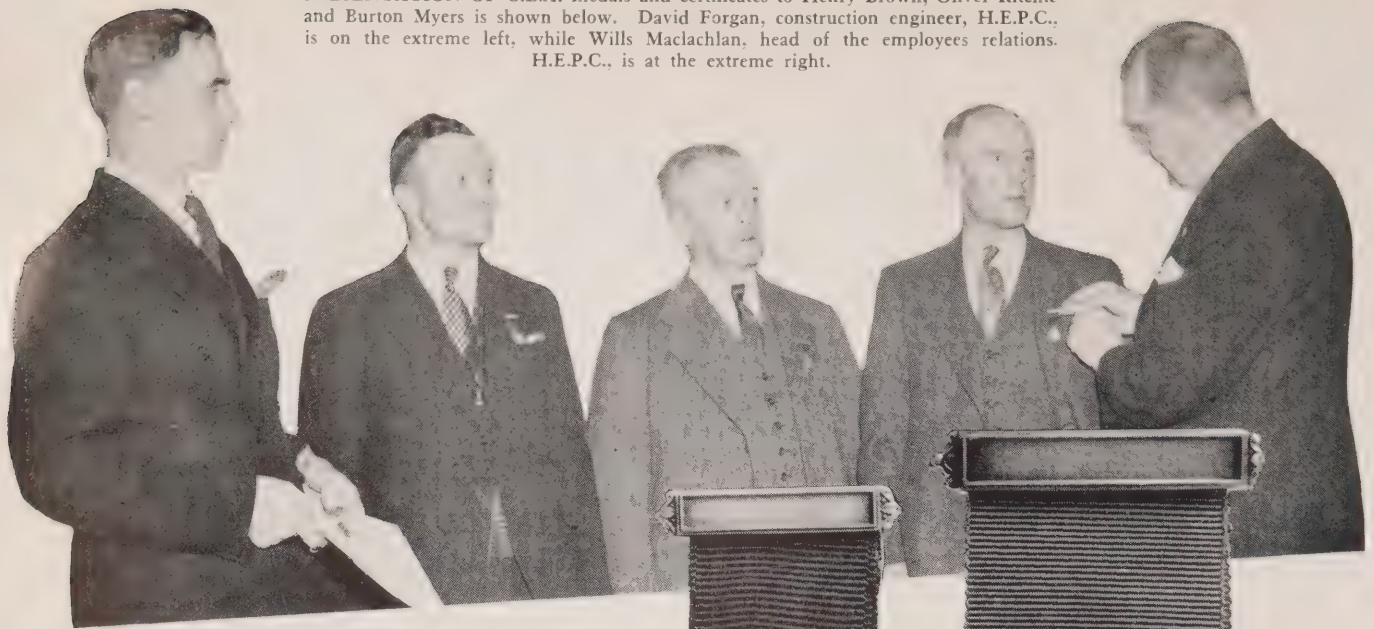
THIS SHOT was taken a few hours after the hatch was off. The little "black fellows," although in the minority, seem to be "holding their own."



THIS PICTURE would indicate that the wide-eyed "bit of yellow fluff" on the left was saying to her companion, "When do we take off?"



PRESENTATION OF C.E.A. medals and certificates to Henry Brown, Oliver Ritchie and Burton Myers is shown below. David Forgan, construction engineer, H.E.P.C., is on the extreme left, while Wills Maclachlan, head of the employees relations, H.E.P.C., is at the extreme right.



### Three Hydro Men are Recipients of C.E.A. Medals

● Medals and certificates were presented to three Hydro employees at a dinner in the H.E.P.C. station at Burlington recently in recognition of their prompt and efficient action which, it is reported, saved the life of a fellow employee last October.

The three men are Henry Brown, Oliver Ritchie and Burton Myers, while the presentations were made by Wills Maclachlan, chairman of the accident prevention committee of the Canadian Electrical Association.

The citation recalled that the men had started resuscitation within 15 seconds after P. R. Watson had been rendered unconscious while he accidentally came in contact with a live wire while working on a switchboard.

The awards, known as the Canadian Electrical Association resuscitation medals, are struck from copper used in the construction of the original 17½ mile stretch of power line between St. Narcisse and Three Rivers in the winter of 1896-97. This copper is stored in ingot form and used exclusively for these medals.

A large medal was received by David Forgan as head of the H.E.P.C. construction department "on behalf of the gang," while the smaller replicas, presented to the men, had the names engraved on the back.



REPRODUCED HERE are illustrations of the medals. The larger was received by David Forgan "on behalf of the gang," while smaller replicas were awarded the men.



WHEN THESE two photographs (left and above) were taken the men at the Burlington camp were watching a movie.



# SPECIAL O.M.E.A. MEETING ENDORSES AMALGAMATION

**Delegates Also Approve Voluntary Levy As Measure To Reduce  
Cost Of Power To Certain Small Municipalities**

**A**MALGAMATION of the Niagara, Georgian Bay and Eastern Ontario systems was approved by a five to one majority at the special meeting called by the Ontario Municipal Electric Association, in the H.E.P.C. auditorium, March 15.

The meeting also authorized a voluntary levy on cost municipalities not exceeding five cents per horsepower. This levy is for the purpose of reducing the cost of power to not less than \$39 in certain small municipalities where it is relatively high.

Steps are now being taken by the H.E.P.C. to effect the integration of the three systems.

During the discussion, Dr. W. J. Chapman, St. Cath-

arines, sought to have a decision on the amalgamation of the three systems postponed until further information could be obtained on the proposed development on the St. Lawrence.

## Benefits Outlined

The benefits accruing from the integration of the three systems were outlined to the delegates at the annual meeting in February, by Dr. Thomas H. Hogg, chairman and chief engineer of the H.E.P.C.

At that time he pointed out that the larger the group of effectively interconnected generating stations, the less troublesome or harmful is the loss of any single generating

*(Continued on page 23)*



THE UPPER photographs were taken during the special meeting of the O.M.E.A. on March 15, while the lower shot was recorded at the executive dinner the night before the meeting. Those in the group are: back row: from left to right, F. H. May, St. Marys; F. E. Welker, St. Jacobs; M. P. Duff, Belleville; P. R. Locke, St. Thomas; John Leslie, Scarborough; George Eifert, Tavistock; Albert Jennings, East York; H. R. Henderson, Woodstock; R. D. Boyes, Alliston; J. R. Beaulieu, Penetanguishene; William V. Brown, Meaford; Gordon S. Matthews, Peterborough; John Irwin, Brampton. Front row: from left to right, Kathleen Ciceri, Guelph. secretary-treasurer; Richard Thomson, Paris; Kenneth A. Christie, K.C., Toronto, past president; Joseph Gibbons, Toronto; W. R. Strike, Bowmanville, president; Garnet Edwards, Windsor; Roy Pierson, Brantford Township; A. P. St. Louis, Riverside; C. J. Halliday, Chesley.



# MIMICO'S IN THE PICTURE



THE STAFF at Mimico were in conference when the Hydro News photographer dropped in. From left to right, they are: June Warner, John Owen, Herbert Bush, superintendent, Marjorie Danter, John A. Cummings, and L. James Ferrie, secretary-treasurer.

**M**IMICO became a member of the Hydro family of municipalities in 1911 with the signing of a contract for 50 horsepower for the street lighting and domestic needs of the village.

Prior to that time Hon. Adam Beck, who was then chairman of The Hydro-Electric Power Commission of Ontario visited Mimico on several occasions to address citizens and ratepayers on the question of Hydro.

Following one of these addresses, the Mimico Ratepayers' Association on April 7, 1911, wrote the village council recommending that it seek the necessary information regarding the cost of electric power and the installation of service.

On September 16, 1911, a vote of the ratepayers was taken on the question of obtaining power from the Commission. The result was a 99-40 vote in favour of Hydro. On the by-law to raise the necessary funds to commence the construction work, 90 voted in favour and 45 against.

The clerk of the municipality at that time wrote to the Commission stating that the question and the by-law had been carried by substantial majorities and asked that men be sent out at once so that construction might be started with as little delay as possible.

Power was first delivered in the spring of 1912, and accompanying this article is an illustration of what is be-

lieved to be the first power bill rendered the municipality by the H.E.P.C. for the month of May, 1912, when the load was apparently 35 horsepower.

An ingenious electronic device is used to turn flat rate hot water heaters off during peak load periods and on again when the peak load period has passed, Mr. Bush explained to Hydro News.

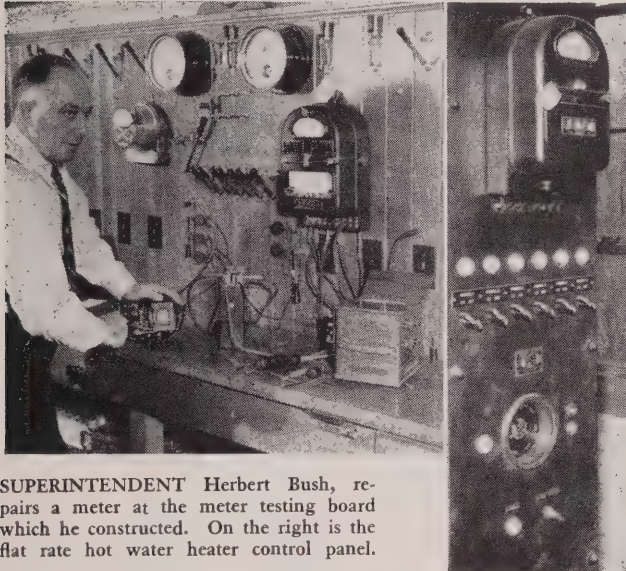
"Our peak load period comes at relatively unvarying



SHOWN ABOVE is the Mimico Municipal office building on Church street.



and definite periods," Mr. Bush declared. "A timing device is set so that at certain times during the day a signal of high frequency is sent out over our distribution lines from the sub-station. This signal is picked up by a radio tube



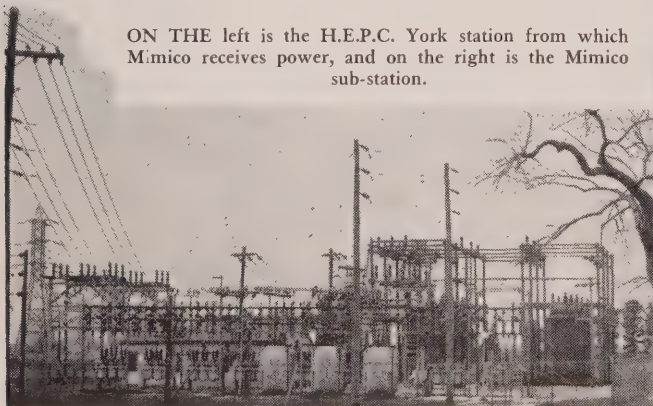
SUPERINTENDENT Herbert Bush, repairs a meter at the meter testing board which he constructed. On the right is the flat rate hot water heater control panel.

and, by operating a relay, shuts off the hot water heaters. After pre-determined time has elapsed another signal is sent over the distribution lines and again the radio tube picks up the signal and operates the relay turning the heaters on again.

"The advantages of this system are that it is unnecessary to run a pilot wire along every street in town resulting in a saving in precious copper and the expense of construction," he declared.

Mimico is largely a residential town, the industrial section of the district being for the most part concentrated in the neighbouring town of New Toronto immediately to the west.

The first commission comprised Jack Harrison, mayor; Carl Hele and Andrew Dods, clerk of the municipality. With the growth of the area the uses for electricity increased. To-day, the load is 3,000 horsepower, and there are 22 miles of transmission line serving 2,221 domestic, 155 commercial, and 25 industrial consumers.



ON THE left is the H.E.P.C. York station from which Mimico receives power, and on the right is the Mimico sub-station.



## STATEMENT

### HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO.

Municipality of \_\_\_\_\_ Dr.

Mimico, Ont.

TORONTO, Ont., June 1st, 1912

To Power used during the month of May 191 2

Max. 20 minute peak during month = 13.5 H. P. @ 30.74 \$ 34.58

Estimated proportionate part of capital cost chargeable to Municipality ..... \$

Interest at 4% ..... \$

Sinking Fund ..... \$

Estimated proportionate part of annual cost for operation, maintenance, repairs, etc., for lines and stations, including line loss ..... \$

Total monthly fixed charges ..... \$ 12

TOTAL ..... \$

Other charges ..... \$

#### RECEIVED PAYMENT

Date July 13, 1912 TOTAL ..... \$

Deductions ..... \$

HYDRO-ELECTRIC POWER COMMISSION

*Herbert Coulton*

Secretary

Total ~~estimated~~ amount due ~~for May~~ for May ..... \$ 34.58

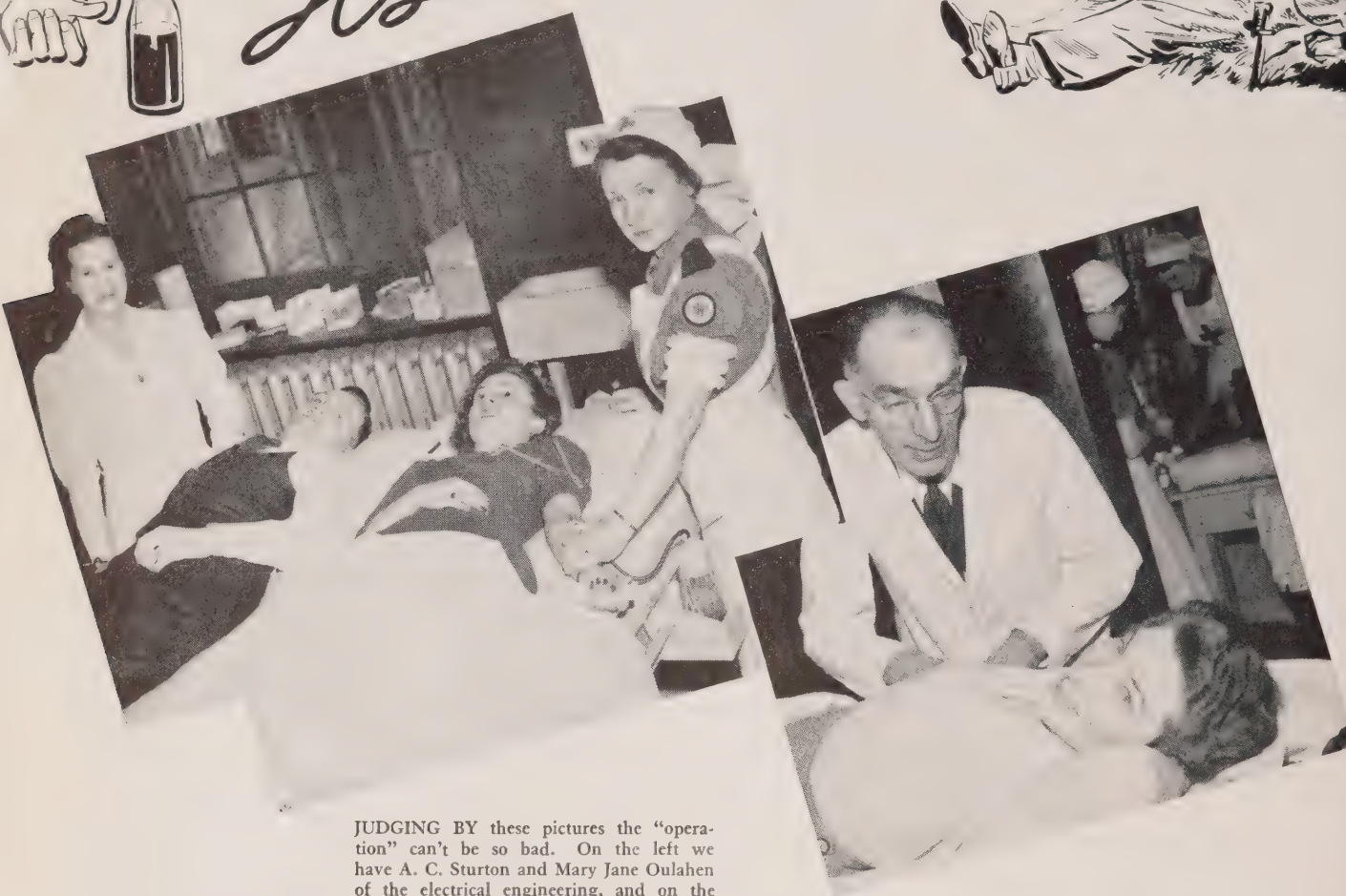
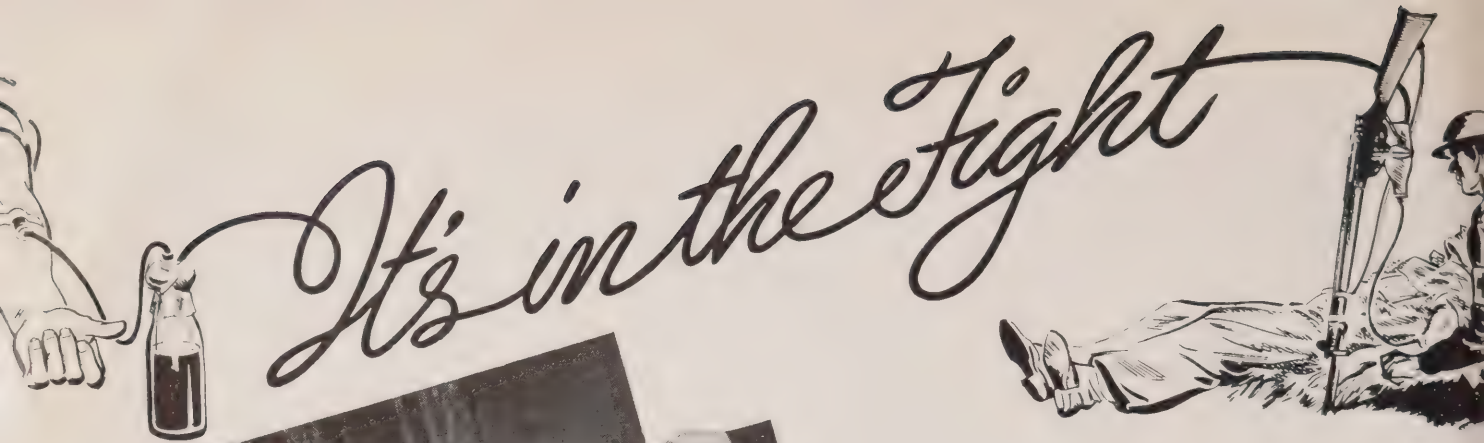
THE FIRST monthly statement rendered to Mimico by the H.E.P.C. on account of the "cost-of-power" for the first year of operation.

The initial construction work in the municipality involved an expenditure of \$7,500, and as extensions were made and street lighting improved, the debt rose steadily until in 1932 it stood at \$106,500. From that time it has been gradually reduced until, in 1943, the final payment was made and the system is now entirely free from debt.

At present the commission is under the direction of James Edmond, chairman; Herbert Coulton, and mayor Amos Waites, commissioners; and James Ferrie, secretary-treasurer.

Among the nationally known people who claim this municipality as their birthplace is Sir Ernest MacMillan, the noted Canadian conductor.





JUDGING BY these pictures the "operation" can't be so bad. On the left we have A. C. Sturton and Mary Jane Oulahen of the electrical engineering, and on the right, Margaret Thompson, of the stenographic bureau. Dr. D. Esser is the interested practitioner.

A CERTAIN janitor in a big Toronto building leaned forward on the handle of a soapy floor mop one night not so long ago, and said, "It's sabotage for a guy to get careless these days and cut even his hand for he may be wasting precious blood that might help some other poor guy to live."

The silver Red Cross emblem in the lapel of this janitor's coat, which was hanging in his locker, told the rest of the story more eloquently than words. He has been a blood donor for nearly two years.

This bit of simple philosophy was recalled by Hydro News upon the occasion of a visit to a Red Cross blood donor clinic recently when a number of Hydro employees attended to give donations.

The visit brought to light some very interesting facts. For instance every transfusion given to a wounded soldier—or civilian for that matter—requires twelve donations.

Because of the vital need for blood, which is helping to save the lives of thousands of men on the battlefields and

in military hospitals—and with the invasion hour drawing near—the Canadian Red Cross has set an objective of 20,000 donations a week.

Many members of the Ontario Hydro-Electric Club are making their contributions towards this objective. In fact, since the club first answered the appeal for donors in February, 1941, there have been 275 enrolments in the Red Cross Volunteer Blood Donor Service. This number includes both men and women, some having made as many as 17 "deposits." As for star donors, W. J. Greves of the operating department, has made 18 donations, and Albert Heal of the administration staff, 20 donations.

#### "Operation" Quite Painless

The donors, ranging in age from 18 to 60 years, give approximately 400 cubic centimetres of blood on each occasion, and go at nine-week intervals.

On talking to the "depositors," Hydro News was in-

(Continued on page 22)





THIS ILLUSTRATION shows Muriel Palmer, Eunice Wands and Mary Jane Oulahan having their temperatures taken.



NEXT COMES the haemoglobin test. A. C. Sturton and Margaret Thompson are the "patients."



HYDRO BLOOD donors, after having doctor's O.K., are "registered in." They are, left to right, William McGregor, A. C. Sturton, Margaret Thompson, Eunice Wands, Mary Jane Oulahan and R. C. Lane.



EUNICE WANDS of the executive department and R. C. Lane, construction department, are the comfortable "patients" shown in this illustration. This marked Mr. Lane's seventeenth donation.



THE COFFEE and doughnut interlude is always an interesting and refreshing part of the "operation."





**E. R. ADDERMAN**  
(St. Thomas)

Joined the operating department of the Commission in 1912; appointed superintendent in October, 1923. Under his supervision are 242 miles of transmission lines, which serve 1,770 consumers.



**G. C. ALLEN**  
(Sarnia)

Joined Commission as foreman at Kingsville in 1928; appointed superintendent at Harrow in May of the same year; and transferred to Sarnia in 1928. Supervises 235 miles transmission lines, serving 2,460 consumers.



**J. E. W. ANDERSON**  
(Sudbury)

Joined the Commission as a clerk at Oshawa in 1917; became senior clerk at North Bay in 1927; appointed superintendent at Sudbury in 1941. Supervises 29 miles of transmission lines, serving 1,401 consumers.



**A. L. BALTZER**  
(Oil Springs)

Joined Commission as a line-man at Kingsville in 1926; appointed superintendent at Oil Springs in 1940. Supervises 192 miles of transmission lines, serving 677 consumers. Oil Springs is also operated for the local commission.



**N. A. BELFRY**  
(Uxbridge)

Joined Commission as superintendent in March, 1930. Supervises 224 miles of transmission lines, serving 1,409 consumers. The municipal system in Uxbridge is also being operated for the local commission.



**S. R. BELFRY**  
(Cannington)

Joined Commission in 1914; transferred to Cannington in 1920; appointed superintendent in 1940. Supervises 147 miles of transmission lines serving 965 consumers. Cannington, Sunderland and Woodville are operated for the local commissions.



**E. G. BENNETT**  
(Cayuga)

Joined the Commission as an operator in 1922 and was appointed superintendent in April, 1930. Under Mr. Bennett's supervision there are 328 miles of transmission lines which serve 1,678 consumers.



**C. R. COLE**  
(Listowel)

Joined the Commission as superintendent at Listowel in the year 1930. Under Mr. Cole's supervision there are 329 miles of transmission lines which are serving 1,297 consumers in that rural area.



**W. P. J. DERHAM**  
(Arnprior)

Appointed superintendent in 1942. Supervises 157 miles of transmission lines, serving 1,242 consumers. Arnprior is operated for the local commission. Operates Braeside distribution system; give assistance to Cobden.



**C. E. DREWRY**  
(Stoney Creek)

Joined Commission as a foreman in 1910; appointed superintendent in 1930. Supervises 324 miles of transmission lines, serving 3,937 consumers. The Hydro-owned distribution system at Stoney Creek and Burlington Beach are also operated.



**O. L. DUBEAU**  
(Penetanguishene)

Joined Commission as part-time superintendent in 1935 and was appointed superintendent at Penetanguishene in 1938. Under his supervision are 207 miles of transmission lines which serve 1,446 consumers.



**T. H. FARRELL**  
(Aylmer)

Joined Commission as line-man in 1911; appointed superintendent in 1926. Supervises 285 miles of transmission lines, serving 1,752 consumers. Assistance is also given to the local commission in the village of Springfield.



**G. S. FARIS**  
(Brampton)

Joined the Commission in 1930 as junior engineer and served in many capacities until his appointment as superintendent in January, 1940. Supervises 330 miles of transmission lines, serving 1,597 consumers.



**R. E. FISHER**  
(Kingston)

Joined Commission as a line-man at Blenheim in 1927; appointed superintendent at Merlin in 1931; later, in 1940, was transferred to Kingston. Supervises 318 miles of transmission lines which are serving 1,932 consumers.



**E. M. HESS**  
(Hastings)

Joined the operating staff of the Commission in 1940 and was appointed as superintendent at Norwood in 1942. Under his supervision there are 57 miles of transmission lines which are serving 282 consumers.



**E. A. HODGSON**  
(Chatham)

Joined Commission in 1918; became lineman in 1925; appointed superintendent at Essex in 1926; transferred to Chatham in 1929. Supervises 235 miles of transmission lines which are serving 1,569 consumers.



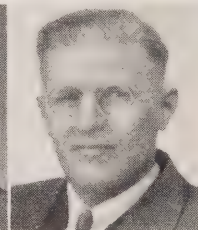
**S. H. HORNBY**  
(Bracebridge)

Joined hydraulic staff of Commission in 1923; transferred to electrical engineering department in 1926; appointed superintendent at Beaumaris in 1938. Supervises 240 miles of transmission lines, serving 1,477 consumers.



**R. E. HUGHES**  
(London)

Joined Commission in 1922; part-time superintendent at London in 1923; appointed superintendent in January, 1924. Supervises 248 miles of transmission lines, serving 3,299 consumers. Operates the London Township system for local commission.



**L. B. HULKO**  
(Port Arthur)

Joined Commission in 1929; appointed superintendent in 1936. Supervises 289 miles of transmission lines, serving 1,425 consumers. Distribution system in Beardmore, Geraldton and Hudson are also being operated.



**A. M. KNIGHT**  
(Goderich)

Joined Commission as a line-man in 1925; appointed superintendent at Mitchell in 1930, and was transferred to Goderich in February of this year. Supervises 301 miles of transmission lines which are serving 1,624 consumers.



**K. J. LAMPMAN**  
(Exeter)

Joined Commission in 1922. Appointed superintendent in 1927. Supervises 318 miles of transmission lines, serving 1,674 consumers. Operates Exeter, Dashwood, Granton and Zurich for local commissions, and gives assistance to village of Lucan.



**JOHN LIGHTBODY**  
(Ridgetown)

Joined Commission in 1923; appointed superintendent in May, 1930. Supervises 137 miles of transmission lines, serving 955 consumers. Ridgetown is also operated for the local commission and assistance is also being given to Highgate.



**A. H. LLOYD**  
(Picton)

Local manager at Tweed from 1920 until he was appointed superintendent at Wellington in 1931. Supervises 303 miles of transmission lines, serving 1,475 consumers. The municipal system in Bloomfield is operated for the local commission.

## "HYDRO'S RURAL"

INTRODUCTION of a uniform amalgamation of 120 rural power systems into one provincial rural power system marks a noteworthy epoch in the history of Ontario.

J. J. Jeffery, assistant chief manager who directs Hydro operations in the province, states that amalgamation means of accounting practice and an equality, but not the closing down of offices.

He points out that the men who have served as superintendents of rural power districts will stay at their posts of duty. "These men," stated Mr. Jeffery, "are Hydro's rural ambassadors. Under a more simplified system they will continue to serve and help Hydro's 140,000 rural consumers, and supervise over 20,000 miles of transmission lines which have been constructed to date throughout the rural sections of the province."

Mr. Jeffery recalled that rural power districts were first organized as area units following





J. C. BURNS  
(Markham)

Joined the Commission as a patrolman in 1916; became lineman at Napanee in 1922; and was appointed superintendent at Markham in 1928. Supervises 296 miles of transmission lines, serving 3,330 consumers.



R. A. CAMPBELL  
(Delaware)

Joined Commission in 1923; appointed superintendent in May, 1926. Supervises 375 miles of transmission lines, serving 1,634 consumers. Delaware and Lambeth are operated for the local commission and assistance is given to Mount Brydges.



D. M. CHAMNEY  
(Richmond Hill)

Joined the Commission as superintendent in 1923. Supervises 214 miles of transmission lines, serving 2,473 consumers. The municipal system of Richmond Hill is also operated for the local commission.



H. E. CHAPMAN  
(Kingsville)

Joined the Commission as a lineman in 1919 and was appointed superintendent at Kingsville in April, 1924. Under his supervision are 199 miles of transmission lines, which serve 2,246 consumers.



J. R. CLAUGHTON  
(Ottawa)

Joined Commission as superintendent in October, 1926. Supervises 287 miles of transmission lines, serving 1,940 consumers. The municipal system of Richmond is also being operated for the local commission.



C. G. CORBETT  
(Huntsville)

Joined the Commission as a lineman in 1931 and was appointed superintendent at Huntsville in 1940. Under Mr. Corbett's supervision are 129 miles of transmission lines, serving 702 consumers.



J. H. CORKILL  
(Owen Sound)

Joined operating staff in 1915; became a patrolman in 1920; appointed superintendent in 1936. Supervises 386 miles of transmission lines, serving 1,845 consumers. The Hydro-owned distribution system in Hepworth is also being operated.



W. B. FORD  
(Blenheim)

Joined Commission in 1930; became an assistant superintendent in 1936; and a superintendent in 1939. Supervises 102 miles of transmission lines, serving 657 consumers. Blenheim, Erieau and Erie Beach are also operated for the local commissions.



H. C. FORT  
(Simcoe)

Joined the Commission as a clerk at Simcoe in 1926, and was appointed superintendent at Simcoe two years later. He has under his supervision 612 miles of transmission lines, which serve 3,572 consumers.



H. R. GRAFF  
(Mitchell)

Joined the Commission as assistant engineer in May, 1931, and was appointed superintendent at Mitchell in 1941. He has under his supervision 378 miles of transmission lines, which are serving 1,680 consumers.



H. P. GREEN  
(Harrow)

Joined Commission in 1928; became foreman at Harrow; appointed superintendent in April, 1929. Supervises 192 miles of transmission lines, serving 1,943 consumers. Harrow is also operated for the local commission.



B. H. HANKINSON  
(Bothwell)

Joined the Commission as superintendent in 1927. Under his supervision are 258 miles of transmission lines which serve 968 consumers. Assistance is also being given to the local commission in the town of Bothwell.



G. F. HARRINGTON  
(Millbrook)

Local manager at Millbrook from 1916 to May, 1937, when he was appointed superintendent at Millbrook. Supervises 55 miles of transmission lines, serving 256 consumers. The municipal system in Millbrook is operated for the local commission.



L. M. HENDRICK  
(Frankford)

Joined Commission in 1937; appointed superintendent in 1938; was transferred to Frankford in 1942. Supervises 300 miles of transmission lines, serving 1,404 consumers. The Hydro-owned distribution system in Frankford is also operated.

## AMBASSADORS"

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J. J. JEFFERY

passing of an amendment to the Power Commission Act in 1920. These districts, generally speaking, covered an area in excess of 100 square miles, the boundaries having been determined by the economic distance which might be supplied from a distribution centre, where an adequate supply of power was available.

Photographs of "Hydro's rural ambassadors" are reproduced on these two pages and on page fourteen.



D. B. IRELAND  
(Stratford)

Joined Commission as a lineman at Delaware in 1931; appointed superintendent at Stratford in 1933. Supervises 204 miles of transmission lines, serving 952 consumers. Assistance is also given to the village of Tavistock.



E. L. JACKSON  
(Bala)

Joined operating department of the Commission in 1929; appointed superintendent at Bala in 1936. Supervises 108 miles of transmission lines, serving 684 consumers. Distribution systems of Bala, MacTier and Port Carling are also operated.



E. M. JOHNS  
(Tweed)

Joined Commission as a lineman at Brockville in 1931; appointed superintendent at Sulphide in 1940. Supervises 170 miles of transmission lines, serving 639 consumers. The municipal system in Tweed is operated for the local commission.



F. E. JUDD  
(Orillia)

Joined the Commission as a lineman in 1928; appointed superintendent of Baysville in 1932, and was transferred to Hawkestone in 1943. Supervises 190 miles of transmission lines which are serving 1,348 consumers.



M. D. KAYE  
(Matheson)

Joined Commission in 1925; appointed superintendent in 1939. Supervises 53 miles of transmission lines, serving 244 consumers. Also operates distribution systems in Ramore, Matheson, Mooretown, Hilslop, King-Kirkland, Kearns and Matachewan.



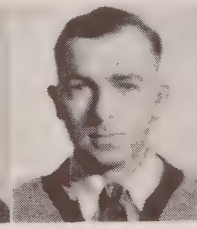
C. D. MacDONALD  
(Kitchener)

Joined the Commission in 1917 and was appointed superintendent in August, 1922. Under his supervision are 398 miles of transmission lines which serve 3,054 consumers.



HARRY McLEOD  
(Lancaster)

Joined Commission as superintendent in July, 1938. Supervises 425 miles of transmission lines serving 2,049 consumers. Lancaster is also operated for the local commission, and assistance is being given to the police village of Martintown.



W. F. McTAVISH  
(Shelburne)

Joined Commission in 1927; appointed superintendent at Shelburne in 1940. Supervises 314 miles of transmission lines which are serving 1,014 consumers. Assistance is also being given to the village of Shelburne.



F. V. MARTIN  
(Essex)

Joined the Commission as lineman in 1911; appointed superintendent at Sandwich in 1924 and was transferred to Essex in 1929. Under his supervision are 236 miles of transmission lines, serving 1,629 consumers.





S. A. MOFFAT  
(Forest)

Joined the Commission as groundman in 1925, and was appointed superintendent at Forest in March, 1939. Under his supervision are 222 miles of transmission lines which serve 910 consumers.



C. A. MYLES  
(Cobourg)

Joined the Commission as superintendent at Colborne in 1939, and was transferred to Cobourg in July, 1940. Under his supervision there are 310 miles of transmission lines, which serve 1,548 consumers.



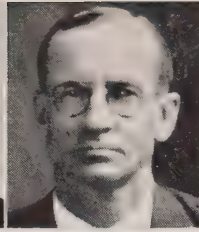
P. W. OLIVER  
(Dorchester)

Joined Commission in 1925; appointed superintendent in 1929. Supervises 155 miles of transmission lines, serving 912 consumers. Operates Dorchester and Thorndale for the local commission, and assistance is given Thamesford.



S. A. ORD  
(Brant)

Joined Commission as superintendent of the Welland R.P.D. in 1924, and in March, 1934 was transferred to Brant. Supervises 459 miles of transmission lines, serving 2,492 consumers. Assistance is also given to the police village of Drumbo.



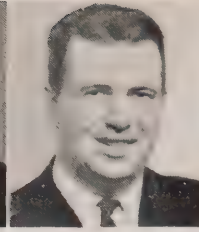
C. L. PEARSON  
(Sutton)

Joined the Commission as superintendent at Sutton in May, 1929. He has under his supervision 191 miles of transmission lines, which serve 2,266 consumers.



H. H. PEGG  
(Windsor)

Joined Commission as superintendent at Tillsonburg in 1925; was superintendent at Ingersoll 1928-29; transferred to Sandwich in March, 1929. Supervises 165 miles of transmission lines, serving 3,883 consumers. Assistance is also given to the town of LaSalle.



J. B. SAUNDERS  
(Stayner)

Joined Commission as superintendent at Kingston in 1931; was transferred to Brockville in 1935; and to Wasaga Beach in 1938. Supervises 182 miles of transmission lines which are serving 2,097 consumers.



S. A. SAYLOR  
(Guelph)

Joined Commission as part-time local inspector at Keno in 1917; appointed superintendent at Woodbridge in 1927; and transferred to Guelph in December, 1934. Supervises 301 miles of transmission lines which are serving 1,623 consumers.



T. A. SCOTT  
(Dundas)

Joined the Commission as superintendent in April, 1925. Supervises 377 miles of transmission lines, serving 3,093 consumers. The Hydro-owned distribution system in the town of Burlington is also operated.



G. L. SHERK  
(St. Catharines)

Joined Commission as local manager at Grantham in 1930; appointed superintendent at Grantham in 1930, and in February of this year was transferred to Niagara. Supervises 207 miles of transmission lines which are serving 2,741 consumers.



O. G. SIMMONS  
(Tillsonburg)

Joined Commission as a labourer in 1926; became foreman in 1927, and was appointed superintendent in 1929. Under his supervision are 206 miles of transmission lines which are serving 1,269 consumers.



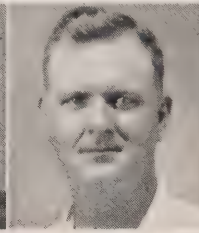
C. A. SILLIPHANT  
(Elmira)

Joined Commission as a line-man in 1929; appointed superintendent at Stratford in 1931, and a year later was transferred to Elmira. Under his supervision are 258 miles of transmission lines, which serve 1,223 consumers.



DALTON SMITH  
(Ingersoll)

Joined Commission in 1927; appointed superintendent of Dutton in 1930. Supervises 245 miles of transmission lines, serving 974 consumers. Embro is also operated for the local commission.



M. T. SOMERS  
(Wroxeter)

Joined Commission as a foreman at Barrie in 1937, and was appointed superintendent at Wroxeter in March, 1944. Under his supervision are 209 miles of transmission line, which are serving 978 consumers.



F. P. STUBBS  
(Dutton)

Joined Commission as line-man in 1930; appointed superintendent in April, 1936. Supervises 117 miles of transmission lines, serving 418 consumers. The municipal system of the village of West Lorne is also operated for the local commission.



I. S. STUBBS  
(Merlin)

Joined Commission as a line-man at Sandwich in 1930; appointed superintendent at Merlin in 1938. Supervises 290 miles of transmission lines, serving 1,300 consumers. The municipal system of Merlin is also being operated for the local commission.



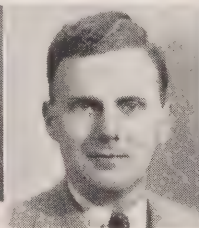
W. F. B. SUTHERLAND  
(Beamsville)

Joined Commission in 1912; appointed superintendent in February, 1923. Supervises 262 miles of transmission lines, serving 2,231 consumers. Municipal systems of Beamsville and Grimsby are also being operated for the local commission.



H. W. SWEAZEY  
(Norwich)

Joined the Commission as superintendent in March, 1928. Under his supervision are 173 miles of transmission lines serving 916 consumers. Assistance is also given to the police village of Burgessville.



K. D. TAYLOR  
(Woodbridge)

Joined Commission as junior engineer in 1940 at Simcoe; appointed superintendent at Woodbridge in 1942. Supervises 292 miles of line, serving 1,918 consumers. Assistance is also given to the village of Woodbridge.



HARRY TIDEMAN  
(Barrie)

Joined operating department of Commission as a patrolman in 1913 and was appointed superintendent at Barrie in 1930. Under his supervision are 422 miles of transmission lines which serve 3,351 consumers.



R. H. TIDEMAN  
(Kagawong)

Joined Commission as a labourer at Barrie in 1930; became a lineman in 1932 and was appointed superintendent in 1939. Under his supervision are 162 miles of transmission lines which are serving 960 consumers.



R. E. TREEN  
(Welland)

Joined Commission as junior engineer in 1940 and was appointed superintendent at Welland in 1943. Supervises 410 miles of line which are serving 5,050 customers. Assistance is also given to the village of Fonthill.



C. F. TUMELTY  
(Wallaceburg)

Joined Commission in 1919; became a lineman at Blenheim in 1927; in December of that year was appointed superintendent, and was transferred to Wallaceburg in 1940. Supervises 307 miles of transmission lines, serving 1,588 consumers.



T. O. VAN BRIDGER  
(Winchester)

Joined Commission in 1913; appointed superintendent in 1938; was transferred to Winchester in 1942. Supervises 384 miles of transmission lines, serving 1,974 consumers. Gives assistance to municipalities of Winchester, Finch and Chesterville.



H. R. VIGAR  
(Woodstock)

Joined Commission as superintendent in January, 1924. Under his supervision are 190 miles of transmission lines which serve 1,085 consumers. Assistance is also given to the police village of Beachville.



G. R. WEBB  
(Delta)

Joined the Commission as lineman in 1926, and was appointed superintendent in December, 1929. There are under his supervision 219 miles of transmission lines which serve 1,225 consumers.



G. E. WHITAKER  
(Brockville)

Joined Commission in 1930; became assistant superintendent in 1930; appointed superintendent at Brockville in 1939. Supervises 273 miles of transmission lines, serving 1,798 consumers. Assistance is given to village of Athens.



G. E. S. WHITON  
(Fenelon Falls)

Joined the Commission as a superintendent at Stamford in 1924 and was transferred to Fenelon Falls in September, 1940. Under his supervision are 265 miles of transmission lines which are serving 1,632 consumers.



# STILL BETTER RURAL SERVICE

**Hon. George H. Challies, Vice-Chairman Of H.E.P.C., Says Uniform Rate "Most Forward Step In Rural Hydro"—Rural Superintendents Also Told About Post-War Plans**

**A**DVANTAGES of the new uniform rural rates, current problems and an outline of tentative plans for the post-war era were discussed at a gathering of Hydro rural superintendents in the auditorium of the H.E.P.C. Administration Building recently.

Hon. George H. Challies, vice-chairman of The Hydro-Electric Power Commission of Ontario, told the superintendents that the introduction of the new uniform rural rates last January was "the most forward step in rural Hydro since Hydro was formed."

He said that the objective for the future, when revenue overtook expense, would be to narrow the gap between the rural rate and those in effect in towns and cities.

He also stated that amalgamation of the 120 rural power districts into one provincial rural power system would iron out inequalities and simplify accounting operations.

The Ontario Government, he said, was vitally interested because it had spent twenty million dollars in taking power to the rural parts of the province and because the government would be responsible for any deficit which might accrue as a result of the introduction of the new rates.

At another point, the Hydro vice-chairman recalled the widespread damage caused by the storm which swept through the eastern part of the province over a year ago. Old-timers, he said, could not recall such a disastrous storm.

Referring to the "excellent work" done by all field men, Mr. Challies described the job done by Hydro linemen in restoring power, during and after the storm, as "a most heroic effort."

In his address to the superintendents, R. T. Jeffery, chief municipal engineer, briefly traced Hydro's development in rural Ontario and the adjustments made from time to time in rural rates.

Prior to 1920, he pointed out, there had been little Hydro service in the rural areas. During that year, however, following an amendment to the Power Commission Act, rural power districts were established and Hydro service was made available to a steadily increasing number of rural consumers.

Mr. Jeffery directed attention to the original service charge of \$6.20 for a standard farm. He pointed out that this charge had been steadily reduced, while corresponding

*(Continued on next page)*



**DURING THE** meeting of Hydro rural superintendents in the auditorium of the H.E.P.C. Administration Building, Toronto, the Hydro News photographer called in and secured the two "shots" shown above. Prominent in the right front of the lower picture are Hon. George H. Challies, Osborne Mitchell and R. T. Jeffery.





**W**HAT Mussolini was probably dreaming about in 1940, Julius Caesar accomplished in 55 B.C.

Roman legions set foot on British soil. In fact they stayed long enough to carry out a road-building and general public works programme.

Meanwhile, British tribes who resented the presence of uninvited guests, conducted councils of war in the forests. Unfortunately, things were quite difficult in the evenings. There were no convenient transmission lines and no Hydro long-life lamps; and so another source of illumination had to be sought. It appears that the British "engineers" of that time were not lacking in enterprise and an answer was found to the problem.

Evening sessions of the war council were conducted by the light of the "Prytaneum"—a fire maintained on a large stone boulder, as shown in the accompanying illustration.

adjustments had been made in the rates. In 1936 when the service charge was reduced from \$2 to \$1 for a standard farm, no adjustment had been permitted in the meter rate, Mr. Jeffery stated. As a result, in several rural areas, many consumers had been receiving power below cost. There were large farms with heavy kilowatt-hour consumption as well as non-farms which had more installed equipment and which were using more power than their classification permitted. The same thing had been true of many service stations, restaurants and stores in a number of rural areas.

Under the new rate structure, Mr. Jeffery pointed out, all rural consumers were on a fair and uniform basis in the matter of rates. The service charge to farmers had been eliminated and that to hamlet users cut in half. As a result, rural consumers as a whole would save over half a million dollars. In all, 97 per cent of the rural consumers would save money, while only the remaining 3 per cent would have small increases in their electric bills, he said.

In order to iron out existing inequalities, Mr. Jeffery stated that a number of consumers would have to be properly classified. To do this installed electrical equipment would have to be listed and the power demand of each consumer over a period of time would be recorded on a graphic meter. He also stressed the fact that an explanation of the re-classification would be given to each consumer.

Other interesting facts associated with the growth of rural Hydro were outlined by J. J. Jeffery, assistant chief municipal engineer. Today, he pointed out, it represented an investment of forty million dollars. There are now over 20,000 miles of Hydro rural transmission lines serving 140,000 consumers, Mr. Jeffery stated, while there are 75 district Hydro offices and 7 districts which are operated by municipalities for the Commission.

Mr. Jeffery explained that gasoline restrictions and manpower shortage had compelled the Commission to curtail rural operations. After the war, however, he stated, they planned to place men in the larger districts to continually visit rural consumers, and especially farmers.

Other plans which Hydro had in mind for the future, he stated, included the standardization of rural offices in the matter of layout, colour scheme and type of building. It would also be necessary to train more linemen, and each district might be permitted to carry an additional lineman's helper to be trained as a lineman, Mr. Jeffery intimated.

#### Post-War Plans

The necessity of promoting and maintaining good public relations between Hydro and its consumers and the important role of rural superintendents in this connection were emphasized by M. J. McHenry, director of sales promotion for the H.E.P.C.

"You are the contact men of this Commission with the consumers in your individual districts," he told the superintendents. "You are serving the best interests of Hydro by serving your consumers—by giving them the information they want and by giving them helpful advice."

After the war, Mr. McHenry stated, Hydro was considering demonstration coaches which could be used for touring the rural areas and thus enable farmers and other consumers to see in operation low-cost appliances and equipment which would be most suitable for them. Ways and means by which such equipment could be distributed were also being considered, Mr. McHenry stated.

Other speakers at the meeting included Osborne Mitchell, secretary of the H.E.P.C., and G. F. Drewry of the municipal engineering department.



# "GROUNDS" FOR ACTION!

By A. B. HAYMAN

President, Horticultural Section

**H**ELLO Gardeners and Others. Who knows but that a lot of those "others" will one day become "gardeners." Why even I sort of aspire to that latter title. Until last year I had never tried to grow vegetables. I had potted around with flowers (under my wife's supervision), but last spring, under the spell of the Victory Garden campaign, I allowed myself to be inveigled into getting the use of a vacant lot, having it ploughed, and planting a variety of vegetable seeds. Indeed I planted everything from "soup to nuts."

The results were surprisingly lucrative, edifying, palate-satisfying, and health-giving; and the working under sunny blue skies (I didn't work under adverse conditions) watching things grow, induced a calmness of mind and soul not to be obtained in other pursuits or hobbies.

Not that everything grew. Oh my no! But I had to learn. Of course I was helped a great deal, and so were you others, by the information supplied by our Victory Garden Committee. You will remember the excellent talks given last year on vegetable gardening and on allied subjects which proved interesting and instructive.

Of course the more experienced "farmers" were always willing to help the tyros. One well-known professional advised me to be sure and plant onions between each row of potatoes—"for," said he, "we don't get any too much rain sometimes. By plantin' them thar onions alongside the taters regular, the onions get growin' first, and they make the potato eyes water. They spill out over the edges and onto the whole patch and by cracky they provide moisture for both crops."

Well I didn't take his advice, even though he talked like a farmer. There may be something in it though.

Now folks, the Victory Garden Committee is functioning again and ready to help you in any way possible. You all realize that the need for our vegetable gardens is going to be just as great this coming summer—in fact the need may be greater than last year. You who possibly can, should have a vegetable garden, so that besides enjoying its many benefits, you will help to relieve the vegetable shortage in our country. Last year the Ontario Hydro-Electric Club, Horticultural Section, Victory Garden Campaign, created a lot of interest in Toronto and throughout the province, and we should all do our best to keep alive this interest. As I mentioned before, the campaign for 1944 is already started, and the committee has prepared plans for assisting club members in many ways. There will be additional and up-to-date information for the folders, and some worthwhile lectures.

Of course we are not forgetting our flower-lovers—those who have no chance to grow vegetables. The club still exists for them, and the usual flower shows will be held this year. We also hope to have an informative talk on roses early in the season, and also one on flower arrangement and on preparation for display.

Next month the opening dinner meeting of the club will be held and all members are urged to attend. They will be assured of an entertaining evening—something different is planned for this occasion—so watch for the date and tickets.

Just a last word to those who will be growing vegetables this coming summer, even if only on a tiny plot. Please fill in and return the registration form and thus help to swell the ranks of Victory Gardeners. It will be immensely encouraging to the club executive and to the campaign committee, if a large number of interested gardeners combine in making a really worthwhile campaign.

Victory gardens are "grounds" for action!

## ELECTRIC CLUB PRESIDENT

**CARL E. SCHWENGER**, distribution engineer of the Toronto Hydro-

Electric System, has been elected president of the Electric Club of Toronto for the ensuing year. **W. D. CORCORAN**, also of the Toronto Hydro, has been named secretary of the club. Other officers elected are: Norman Knight, past president; O. W. Titus, W. H. C. Seeley and W. I. Turner, vice-presidents; W. E. Pointon, treasurer; G. Appleton and H. F. Powell, auditors; executive committee: J. S.

McGregor, G. W. Austin, J. A. Clish, G. F. Dale, F. S. Jardine, L. E. James, G. W. Lawrence, H. R. Fardoe, C. Ogilvie, W. E. Ross, A. V. Cooper, W. J. Wylie, J. G. Inglis, E. M. Brydon, A. V. Armstrong, J. Heggie, W. G. Pengeley, H. M. Morris, F. H. Chandler and A. Powell.





## MIMICO'S CHAIRMAN

**JAMES EDMOND**, chairman of the Mimico Public Utilities Commission, was born at Campsie Glen in Auld Scotia, and while he has lived in Canada for a long time he has never lost his Scottish burr.

Educated at Bearsden High School, he learned among other things, a game called soccer at which he became quite proficient as both a player and official.



Mr. Edmond has served the local commission for five years as a commissioner and this year was elected chairman. He has given his time freely to the community in which he lives, having served for six years on the board of health, and for two years on the welfare board. He organized the Mimico Beach Soccer Club and has been its president for the past 20

years, and has also been treasurer of the local football association for the past 17 years. At the same time, Mr. Edmond has been keenly interested in boys' activities and is active in the scout movement and the Y.M.C.A.

## MIMICO'S MAYOR

**AMOS H. WAITES**, mayor of Mimico, is a native son, and was educated in New Toronto and Toronto. He has served the utilities commission for seven years.

He commenced his municipal career in 1926 when he was elected to serve on the Mimico town council. From 1927 to 1929, Mr. Waites held the office of deputy reeve and was reeve from 1931 to 1935. With the exception of the year 1942, he has occupied the mayor's chair since 1936.



He is also interested in the youth of his community, having been superintendent of Wesley United Sunday School for fifteen years, as well as serving the local Y.M.C.A.

Mayor Waites' family has long been associated with the district, his father having been born in Peel County, and farmed land in Etobicoke township on which Mimico is now built.

There is a persistent rumour that Mayor Waites plays a game called Euchre at which, they say, he is quite proficient.

## "MANY HAPPY RETURNS"

**HERBERT COULTON**, who has served on the commission and as chairman of the Mimico Public Utilities Commission for the past fourteen years, has made a hobby of Hydro.

Born and educated at Keighley, Yorkshire, England, Mr. Coulton is widely known in Mimico where he is a merchant and postmaster. He is keenly interested in sports and, when a lad, he is reported to have made a name for himself on the "rugger" fields of England.

Incidentally, Mr. Coulton has a birthday on April 11, so that "Many Happy Returns" are in order.



## SUPERINTENDENT AT MIMICO

**HERBERT F. BUSH**, superintendent of the Mimico Public Utilities Commission, who was born and educated in Bristol, England, worked for the H.E.P.C. for a year in 1911, and later joined the Mimico Commission as foreman and meter tester. Three years ago he became superintendent.

While attending school, Mr. Bush took an active interest in sports particularly boxing and running. His hobbies are rose gardening, bowling, travelling and fishing.



## SECRETARY-TREASURER

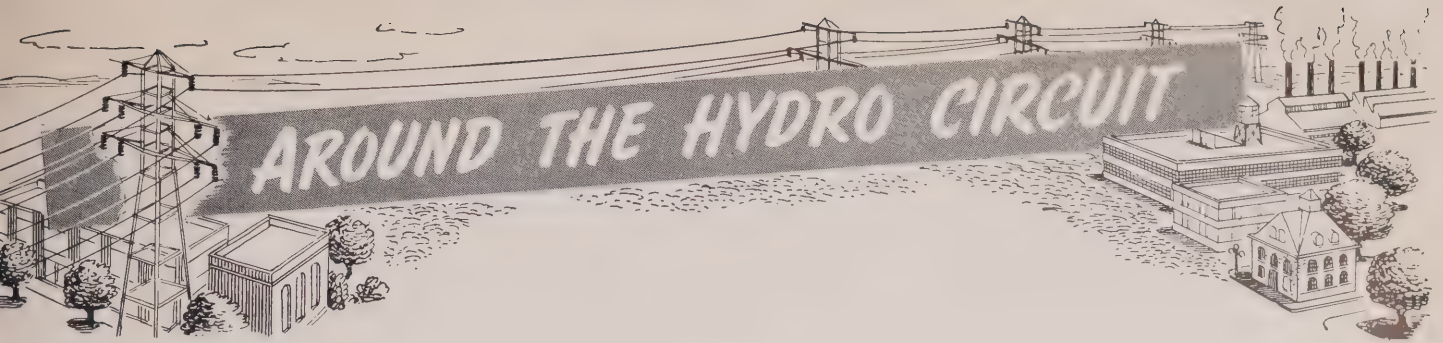
**L. JAMES FERRIE**, secretary-treasurer of the Mimico Public Utilities Commission, and a veteran of the last war, is a native of Mimico.

From 1923 he was tax collector, until his appointment as clerk-treasurer of the municipality in the year 1933. Since 1932 he has been secretary-treasurer of the Union Sewerage Commission of Mimico and New Toronto.

While at school he played both baseball and hockey, and is still interested in these sports as well as lacrosse and golf. They also say that he plays a fair hand of euchre when he gets a good partner.







### MISS CICERI'S FATHER PASSES

**K**ATHLEEN CICERI, secretary-treasurer of the Ontario Municipal Electric Association, lost her father, Elegio (Eli) Ciceri, suddenly on March 17, two days following the special meeting of the O.M.E.A. which Miss Ciceri attended in Toronto.

A native of Baden, Ontario, Mr. Ciceri had resided in Guelph for the past 35 years, and was a moulder by trade. After having been associated with Crowe's Foundry for 25 years, he was employed at the Callander Foundry where he worked until the day before his death.

Mr. Ciceri, who was 62 years of age, is survived by his widow; one brother, Albert, of Belleville; three sons, Harold, Guelph; Earl, overseas; and Norman with the army in Canada; three daughters, Edna and Kathleen, at home, and Mrs. H. Gimbel of Kitchener. Three children predeceased him.

At the request of W. R. Strike, president of the O.M.E.A., D. Kennedy, commissioner, and Stewart Watt, manager of the Guelph commission, represented the association at the funeral on Monday, March 20. Interment was at Woodlawn cemetery.

### WAS WIDELY KNOWN

**DR. OLIVER M. BEATTIE**, chairman of the Sutton Hydro-Electric Commission, aged 50, passed away recently at the Toronto General Hospital.



Born in Stayner, he graduated from the University of Toronto in 1923, and was an interne in the Toronto General Hospital.

Dr. Beattie had been a commissioner of the Sutton Hydro-Electric Commission since 1929, and in January, 1942, was elected chairman, which office he held until his death.

Although a very busy practitioner in a large community, as well as being medical health officer for the Township of North Gwillimbury, and the village of Sutton, Dr. Beattie found time to participate in many local activities.

He is survived by his widow, Elva Giffen Beattie; two sons, Peter and Paul; a sister, Sadie of Stayner; and five brothers, Hector, Isaac and Edward, all of Stayner; William J. Beattie, assistant general manager of the Canada Life Assurance Company, Toronto; and R. Leslie Beattie, vice-president and general manager, International Nickel Company of Canada Limited, Copper Cliff.

### GALT MANAGER DIES

**HAROLD RAYMOND HATCHER**, 58, manager of the Galt Public Utilities Commission for almost ten years, died recently in a Toronto hospital following an operation.

Born in Brantford, Mr. Hatcher was educated in Essex County and Carnegie Institute of Technology in Pittsburg, Pa.



Interested in Hydro from its inception, he became chairman of the first commission in Walkerville, where he also had the distinction of being the youngest mayor in Walkerville's history.

In the early part of the first Great War he served with the Royal Canadian Engineers and then transferred to the navy, where he served aboard a destroyer. At one time he was engaged in fruit growing in Cuba and, prior to going to Galt, was with the Canadian Westinghouse Company.

A member of the Kiwanis club, Mr. Hatcher was always interested in boys and had been in charge of the club's boys' work for several years. He was a member of the Board of Trade and, at one time, was president. He was a member of the Association of Professional Engineers of Ontario, secretary-treasurer of the Grand Valley group, and a former secretary of District No. 6, of the Ontario Municipal Electric Association.

He is survived by his widow, the former Jean Boyle, a son, W. T. Hatcher, in the Royal Canadian Navy, three daughters, Marian, R.N., Betty and Eleanor, all at home, and a brother, Leslie C. Hatcher, of Detroit.

A guard of honor, comprising naval officers and men and trainees from the Galt aircraft and naval schools in which Mr. Hatcher had been keenly interested, attended the funeral.

### MARION BECK DEAD

**MRS. JOHN HOLLAND, (MARION BECK)**, aged 40 years, only daughter of the late Sir Adam Beck and Lady Beck, died recently in the Private Pavilion of the Toronto General Hospital, after a brief illness. Mrs. Holland was considered one of the outstanding horsewomen of the continent and won many trophies in horse-jumping competitions in Toronto, New York and Montreal. She was an outstanding golfer and during her recent residence in England, she played as a member of the ladies' team for the Royal North Devon Golf Club. She was also a crack shot.

She married Strathearn Hay in 1926. Her second marriage was to John Holland of London, England, in 1935, and for three years they made their home at Libbier Barton, Devon. While there, Mrs. Holland became interested in dog breeding, particularly in Pembroke Welsh Corgies.

She is survived by her husband and daughter (Lillian Strathearn Hay).



**M**ANY women lack system, originality and imagination when it comes to cooking. Furthermore, they are inclined to do too much guessing instead of taking the trouble to follow the directions of a recipe to the last detail.

This is the opinion of a man who regards cooking as one of his hobbies, and who claims he has very seldom had a failure in any of his "culinary adventures."

When he walked into the Hydro Home Forum office the other day and made these observations, we thought they were too interesting to keep to ourselves. Men and women who read this column may have other opinions. If so, we shall be glad to hear from them.

But before coming to any conclusion, it would be well to hear more about this man and his views, and something about his own accomplishments in the kitchen. In the first place, it should be borne in mind that his comments are offered as "constructive criticism." He is known as the "tall, dark and handsome" type, and is, actually, quite modest about his undoubted ability as a cook. In professional life, he ranks among the best of our Canadian photographers. Because of his modesty, we shall just call him "Al" instead of using his full name.

"A woman," says Al, "should use a teaspoon instead of her intuition when the recipe says a teaspoon."

When a man takes up cooking as a hobby or a business he usually regards it as an art which gives expression to the desire to create, and that means patience and close attention to all the little details, he stated. He believes that many women regard cooking as "just another chore round the home," and that they feel there is no time for this "arty business."

Now, let me pass along something about the personal culinary achievements of our friend Al. On a number of occasions he has thrown a dinner party for from six to ten persons and he has done it without any help. He does admit that it takes a whole day when it's a one-man job. But time means nothing to an artist when he sets out to do something really big!

His menu on one occasion comprised a cocktail of spiced fruit juice, thoroughly chilled; grapefruit à la reine; an entree of tuna fish, salmon and crumbs, baked in an electric oven and served in shells; crown roast of lamb; potato puff balls; vegetable macedoine and a dessert made from jellied fruit, marshmallows and lady fingers covered with whipped cream which had been fashioned into special shapes and designs.

For the centre of the table on which the meal was served, he had a mirror covered with blue cellophane and

surrounded by cotton wool, to simulate cool water, an illusion which was enhanced by illumination from small coloured lights. At each place round the table was a menu card on which was a drawing of a polar bear.

That, of course, was a pre-war menu and, as Al points out, many recipes are, of necessity, "out of bounds" for the duration. However, he feels there is still plenty of scope for "originality and imagination" in the kitchen.

Needless to say, we have private meditations about the views expressed by our visitor, particularly in regard to woman's alleged lack of system, originality and imagination. Many women may be of the opinion these are harsh, cruel words. However, we have recorded them as a matter of interest.

### Questions Answered

In closing, we would like to pass along a few pointers which will answer a number of questions presented to Hydro Home Forum recently.

1. When frying, use only a little fat, and remember, the broiling grate should be slightly greased.

2. Use the electric element on "low" when cooking eggs.

3. Use the electric element on "high" to cook steaks and chops. Place steaks three inches from the top oven element, and it is necessary to turn only once, allowing ten to fifteen minutes for each side.

4. To thicken sauces, mix a smooth paste of one tablespoon of flour with a quarter of a cup of water and then add a little of the hot liquid (about half a cup) to the paste before stirring it into the contents of the pan which should be over a "medium" heat.

On request, Hydro Home Forum will supply instructions on making light, flaky pastry which is one of man's favourite desserts.

### EASTER THOUGHTS

**W**E were thinking about eggs the other day, and their significance in relation to Easter.

The early Egyptians, Gauls and others, we are told, regarded the egg as the symbol of life and, thus the Christians made it a part of the Easter festivities.

To find the "why" in the case of coloured eggs, we have to dig back to early times when the Jews and other races boiled eggs hard and dyed them, probably to symbolize the blossoming of Spring.

In Britain, the rolling of coloured eggs in the public parks and in the country at Easter is a recognized sport among children, while it is also a part of the Easter observance at the White House in the United States.

And just a word about Easter bonnets. A new bonnet at Easter is supposed to assure happiness for the rest of the year.





# THE NIGHT WAS FILLED WITH MUSIC

**T**HESE are a few camera impressions of the Ontario Hydro-Electric Club's annual dance at the Club Top Hat, Toronto, on March 3.

Proceeds from the event go to the club's Consolidated War Services Fund to provide comforts for members of the armed forces, prisoner-of-war parcels and other war activities.

Uniforms of the army, navy and air force were prominent among the happy gathering of some 300 Hydro employees who attended the dance. Many, no doubt, will "discover" themselves in the accompanying illustrations.



## HEN PARTY

(Continued from page 4)

ately placed in boxes and piled on racks, which are rolled to the grading room to dry down for a few hours. As soon as they are ready for handling, these lively, wide-eyed, cheeping, chirping "balls of fluff" are graded, counted, boxed and often sexed. Each carton, containing one hundred chicks, is labelled with the breed and number, and rushed to the railway station in a heated truck, where they are transferred into warm express cars and sent speeding on their respective journeys. Some of the "babies" are pale yellow and some black, depending upon their breed—whether they are white leghorns, barred rocks or hybrids.

### Like Baby's Formula

It will be seen from the foregoing that the poultry industry has become scientific in every respect and specially balanced diets are an important feature. In many respects the modern chick's diet is comparable to a baby's formula, and contains proteins, minerals and vitamins, as well as other essentials. Like all infants, the chicken's menu is changed from time to time. For the first seven to eight weeks a special mixture called "starter," is used, and during the next eighteen weeks they are fed a "growing mash," to promote the development of bone and muscle. This is followed up by a diet which is properly balanced for either egg or meat production, depending upon what the owner intends to do with his fowl. These various feeds contain cereal grain, buttermilk powder, fish, alfalfa and bone meal, oyster shell, iodized salt and cod liver oil.

These and many other interesting facts associated with the business of raising chicks were discussed by Mr. Marshall, whose two-storey hatchery flourishes in a hamlet originally pioneered by United Empire Loyalists.

"You know," he remarked as he watched a helper load a batch of chicks into boxes, "Hydro is doing a mighty important, all-round job in the rural parts of this province."

Then, with a smile, he added, "Perhaps, like some hens, it may have scratched only the surface as yet."

## IT'S IN THE FIGHT

(Continued from page 10)

formed that the "operation" is quite painless. Temperatures and haemoglobin tests are taken and then a few important questions concerning general health are asked by a doctor. Later, while comfortably lying down, the donor's arm is washed with an antiseptic and the blood is skilfully withdrawn, under a doctor's supervision. Following this procedure, which takes only a few minutes, the donor partakes of a generous supply of coffee, doughnuts, biscuits and cookies in the refreshment room.

Now a word about how the serum or plasma is treated for use on the battle front. When the blood is withdrawn from the donor's arm it is poured into specially prepared sterile bottles. After it has had time to clot, it is sent to the laboratory and, on arrival there, the serum is separated from

the blood clot. Samples of the plasma are then taken for complete bacteriological testing and for typing.

The typing of each serum as it comes into the laboratory is important as research has shown that the sera from various blood samples, when pooled in definite proportions, can be safely administered to all patients without matching blood types.

### Process Requires Two Weeks

The pooled plasma is then passed through extremely fine filters as a further safeguard to ensure its sterility. Next, it is poured into pint bottles and frozen solid in a mixture of dry ice and alcohol. During the freezing the bottles are placed in centrifuges and, in this machine, the serum dries to powder without melting. It boils, as it were, at 10 degrees below zero (Centigrade) until all the moisture has been removed, a process which requires about 72 hours. When the plasma is thoroughly dry, the bottles are removed from the centrifuges, capped and hermetically sealed in tin containers. In this way it is possible to keep the dried plasma stored, under almost any conditions, for a period of years. It is interesting to note that the processing of a single lot of serum requires approximately two weeks.

To use the serum, on front line casualties, it is only necessary to add a specified quantity of sterile water.

Red Cross officials told Hydro News that there is an urgent need for blood. As one of them put it: "We must not fail in this life-giving service. This work, of course, depends upon the willingness of the folks at home to volunteer as blood donors."

At present the Canadian Red Cross is operating 71 blood donor clinics, 314 sub-clinics and 22 mobile units.

## WHITBY CHAIRMAN PASSES



**CHARLES ERNEST HARPER**, chairman of the Whitby Public Utility Commission, passed away recently.

Born and raised in Whitby, he took a keen interest in the town's municipal affairs, having been on the council in 1914, and mayor in 1918, 1920 and '21. In 1932 Mr. Harper was elected member of the P.U.C., and the following year became chairman, which office he held until his death.

He is survived by his widow; a son, Keith in Toronto; and a daughter, Nellie, at home.

## J. G. BALLINGER DIES SUDDENLY

**JOHN GRAYDON BALLINGER**, assistant engineer in the station section of the electrical engineering department, H.E.P.C., died suddenly on February 28. A native of Streetsville, Ont., and a graduate of the University of Toronto, he had been identified with the Commission since 1920. Surviving are his widow and two sons, Frank and John.



## ENDORSES AMALGAMATION

(Continued from page 7)

unit or station. The larger the system, the smaller the percentage of reserve capacity is required for the whole area, and the greater the territory covered by a large interconnected system the less violent is the overall effect of local weather disturbances.

Dr. Hogg reminded the delegates that the first benefit would be seen in the pooling of generating and administrative costs. He said that the three southern systems had been benefiting in a limited way through the interconnection of the transmission networks by frequency changers and tie lines. It was also pointed out that the amalgamation would make possible the undertaking of larger and more economical power generating projects with less risk of loss due to inability to put the new power to work within a reasonable time.

R. T. Jeffery, chief municipal engineer, H.E.P.C., outlined in detail to the special meeting the basis of the amalgamation and the manner in which reserve accounts would be pooled. He also declared that the interchange of power had now become a problem so complicated that it was almost impossible to keep track of it, and with the amalgamation of the three systems this would now be eliminated.

Speaking on the question of the voluntary levy, Kenneth A. Christie, K.C., past-president of the O.M.E.A., and vice-chairman of the Toronto Hydro-Electric System, pointed out that because of the size of Toronto's load, the contribution his municipality would make on the basis of five cents per horsepower would probably be sufficient in itself to accomplish the desired purpose.

### Will Benefit Whole Enterprise

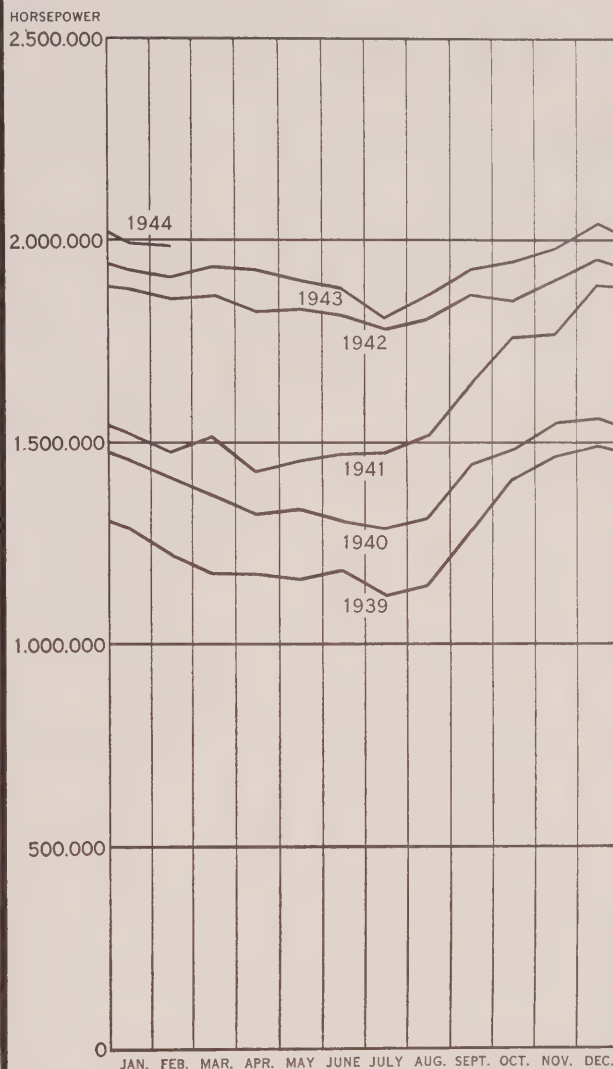
"We are prepared to make this contribution to the general welfare of the great Hydro co-operative enterprise," he said. "We feel that this small contribution to those municipalities where power costs are relatively high will, in the long run, be of benefit to the whole enterprise if it enables them to build up their load to a point where they no longer require help from the more fortunately situated municipalities.

"This levy," continued Mr. Christie, "could be placed in the cost of power by the provincial government raising water rental charges and the money used for this purpose. In that event, the levy would become of permanent duration while, by doing it voluntarily ourselves, as soon as the time comes when help is no longer required, the levy can immediately be stopped."

George A. Annett, chairman of the Alvinston commission, declared that his municipality was situated on the extreme end of a transmission line and, accordingly, their power costs were high. He pointed out that these high costs had adversely affected industrial activities in the district resulting in the entire burden being borne by the domestic consumers. He declared that if it were possible to give his municipality some relief he believed that it would be possible to build up the load to a point where they might be able to bear their proportionate share of the cost of supplying power to the district.

The vote favouring amalgamation was 553 to 105, and that endorsing the voluntary levy, 60 to 21.

## SOUTHERN ONTARIO SYSTEMS NIAGARA — GEORGIAN BAY — EASTERN ONTARIO PRIMARY LOAD



### PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	FEB., 1944	FEB., 1943	
SOUTHERN ONTARIO SYSTEMS . .	1,986,693	1,910,843	+ 4.0
THUNDER BAY SYSTEM . . . . .	102,279	100,509	+ 1.8
NORTHERN ONTARIO PROPERTIES . .	204,029	214,908	- 5.1
TOTAL . . . . .	2,293,001	2,226,260	+ 3.0

### PRIMARY AND SECONDARY LOADS

SOUTHERN ONTARIO SYSTEMS . .	2,099,220	2,008,296	+ 4.5
THUNDER BAY SYSTEM . . . . .	107,440	115,282	- 6.8
NORTHERN ONTARIO PROPERTIES . .	215,624	241,584	- 10.7
TOTAL . . . . .	2,422,284	2,365,162	+ 2.4

# MUNICIPAL LOADS, JANUARY, 1944

## NIAGARA SYSTEM (25-Cycle)

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Acton	1,622	1,903	Erie Beach	8	21	Palmerston	595	1,400
Agincourt	205	P.V.	Essex	588	1,886	Paris	2,132	4,604
Ailsa Craig	120	487	Etobicoke Twp.	8,870	V.A.	Parkhill	193	1,029
Alvinston	106	649	Exeter	708	1,654	Petrolia	1,068	2,768
Amherstburg	851	2,704	Fergus	1,258	2,759	Plattsville	145	P.V.
Ancaster Twp.	427	V.A.	Fonthill	176	860	Point Edward	1,755	1,199
Arkona	55	403	Forest	542	1,562	Port Colborne	2,407	6,928
Aurora	1,388	2,821	Forest Hill	7,737	12,172	Port Credit	934	1,934
Aylmer	864	1,985	Galt	11,925	15,126	Port Dalhousie	810	1,599
Ayr	199	760	Georgetown	1,799	2,452	Port Dover	428	1,790
Baden	597	P.V.	Glencoe	180	763	Port Rowan	105	700
Beachville	713	P.V.	Goderich	1,641	4,674	Port Stanley	306	824
Beamsville	447	1,227	Granton	57	P.V.	Preston	4,355	6,656
Belle River	187	836	Grimsby	829	1,988	Princeton	126	P.V.
Blenheim	594	1,873	Guelph	11,962	23,074	Queenston	107	P.V.
Blyth	111	662	Hagersville	567	1,524	Richmond Hill	463	1,295
Bolton	230	629	Harriston	425	1,292	Ridgetown	655	1,986
Bothwell	135	683	Harrow	504	1,092	Riverside	1,273	5,235
Brampton	2,558	6,157	Hensall	203	686	Rockwood	118	P.V.
Brantford	23,755	31,622	Hespeler	2,841	2,938	Rodney	140	758
Brantford Twp.	1,224	V.A.	Highgate	108	322	St. Clair Beach	65	138
Bridgeport	156	P.V.	Humberstone	638	2,831	St. George	152	P.V.
Brigden	83	P.V.	Ingersoll	3,498	5,757	St. Jacobs	353	P.V.
Brussels	145	784	Jarvis	196	513	St. Marys	1,519	4,009
Burford	216	P.V.	Kingsville	662	2,453	St. Thomas	7,937	17,045
Burgessville	38	P.V.	Kitchener	27,490	35,456	Sarnia	10,680	18,599
Burlington	1,610	3,925	Lambeth	133	P.V.	Scarborough Twp.	4,875	V.A.
Burlington Beach	396	1,474	LaSalle	241	907	Seaforth	879	1,782
Caledonia	353	1,430	Leamington	1,680	6,048	Simcoe	2,850	6,340
Campbellville	40	P.V.	Listowel	1,399	2,984	Smithville	176	P.V.
Cayuga	125	700	London	41,028	77,105	Springfield	68	382
Chatham	7,407	17,184	London Twp.	610	V.A.	Stamford Twp.	2,872	8,275
Chippawa	345	1,228	Long Branch	1,344	4,258	Stoney Creek	265	933
Clifford	103	491	Lucan	171	643	Stouffville	276	1,198
Clinton	644	1,879	Lynden	114	P.V.	Stratford	7,256	17,163
Comber	123	P.V.	Markham	353	1,175	Strathroy	1,499	2,834
Cottam	77	P.V.	Merlin	92	P.V.	Streetsville	233	701
Courtright	45	355	Merritton	12,182	2,916	Sutton	160	949
Dashwood	98	P.V.	Milton	1,506	1,915	Swansea	3,400	6,907
Delaware	65	P.V.	Milverton	392	994	Tavistock	645	1,080
Delhi	682	2,430	Mimico	2,968	8,354	Tecumseh	371	2,331
Dorchester	105	P.V.	Mitchell	748	1,670	Thamesford	207	P.V.
Drayton	139	528	Moorefield	50	P.V.	Thamesville	204	816
Dresden	450	1,525	Mount Brydges	97	P.V.	Thedford	103	598
Drumbo	92	P.V.	Newbury	41	288	Thorndale	71	P.V.
Dublin	48	P.V.	New Hamburg	599	1,441	Thorold	2,910	5,284
Dundas	3,217	5,245	Newmarket	1,747	3,800	Tilbury	1,499	1,923
Dunnville	1,362	3,916	New Toronto	12,371	9,469	Tillsonburg	1,520	4,602
Dutton	252	830	Niagara Falls	10,647	20,371	Toronto	361,623	657,612
East York Twp.	9,421	41,578	Niagara-on-the-Lake	738	1,764	Toronto Twp.	3,166	V.A.
Elmira	1,289	2,069	North York Twp.	11,531	V.A.	Wallaceburg	4,137	4,802
Elora	447	1,185	Norwich	399	1,301	Wardsville	36	221
Embro	153	420	Oil Springs	186	541	Waterdown	257	867
Erieau	74	281	Otterville	103	P.V.	Waterford	494	1,294
						Waterloo	5,660	8,968
						Watford	389	1,023



# MUNICIPAL LOADS, JANUARY, 1944

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Welland	11,401	14,899	Neustadt	46	431	Lakefield	439	1,301
Wellesley	102	P.V.	Orangeville	695	2,558	Lanark	81	686
West Lorne	295	768	Owen Sound	6,011	13,559	Lancaster	46	570
Weston	5,138	6,333	Paisley	108	530	Lindsay	3,661	8,345
Wheatley	215	761	Penetanguishene	1,035	4,177	Madoc	186	1,130
Windsor	55,875	118,040	Port Carling	115	520	Marmora	143	1,004
Woodbridge	596	946	Port Elgin	409	1,415	Martintown	38	P.V.
Woodstock	8,653	12,339	Port McNicoll	107	950	Maxville	109	811
Wyoming	77	538	Port Perry	255	1,175	Millbrook	88	749
York Twp.	22,352	77,175	Priceville	10	P.V.	Morrisburg	283	1,484
Zurich	119	P.V.	Ripley	108	420	Napanee	1,262	3,241
(25 and 66-2/3 Cycle)			Rosseau	25	305	Newcastle	135	701
Hamilton	160,597	164,719	Shelburne	232	1,053	Norwood	136	710
St. Catharines	33,538	34,541	Southampton	559	1,467	Omeme	189	630
Trafalgar Twp.	529	V.A.	Stayner	258	1,106	Orono	95	P.V.
(66-2/3 Cycle)			Sunderland	75	P.V.	Oshawa	18,782	26,610
Bronte	176	P.V.	Tara	95	510	Ottawa	38,678	150,861
Oakville	1,301	3,369	Teeswater	131	873	Perth	1,705	4,197
GEORGIAN BAY SYSTEM			Thornton	31	P.V.	Peterborough	12,480	24,977
(60-Cycle)			Tottenham	89	532	Picton	1,165	3,400
Alliston	383	1,700	Uxbridge	311	1,480	Port Hope	2,473	4,997
Arthur	167	1,089	Victoria Harbour	76	979	Prescott	1,391	3,318
Bala	98	355	Walkerton	935	2,534	Richmond	64	428
Barrie	4,091	355	Waubaushe	80	P.V.	Russell	73	P.V.
Beaverton	182	941	Warton	261	1,750	Smiths Falls	2,830	7,741
Beeton	159	617	Windermere	25	117	Stirling	263	947
Bradford	166	1,041	Wingham	779	2,149	Trenton	4,734	8,183
Brechen	48	P.V.	Woodville	73	439	Tweed	229	1,181
Cannington	167	761	EASTERN ONTARIO SYSTEM			Warkworth	64	P.V.
Chatsworth	74	333	(60-Cycle)			Wellington	203	948
Chesley	545	1,812	Alexandria	180	1,976	Westport	93	725
Coldwater	150	545	Apple Hill	49	P.V.	Whitby	1,334	4,236
Collingwood	2,685	6,249	Arnprior	1,307	4,019	Williamsburg	79	P.V.
Cookstown	80	P.V.	Athens	102	626	Winchester	322	1,017
Creemore	128	661	Bath	38	325	THUNDER BAY SYSTEM		
Dundalk	220	686	Belleville	7,544	15,498	(60-Cycle)		
Durham	373	1,874	Bloomfield	89	636	Fort William	16,750	30,370
Elmvale	163	P.V.	Bowmanville	3,066	3,850	Nipigon Twp.	243	V.A.
Elmwood	70	P.V.	Brighton	456	1,462	Port Arthur	21,448	24,217
Flesherton	59	452	Brockville	4,799	11,112	NORTHERN ONTARIO		
Grand Valley	135	645	Cardinal	269	1,602	PROPERTIES		
Gravenhurst	1,176	2,261	Carleton Place	1,760	4,143	Nipissing District		
Hanover	1,331	3,190	Chesterville	268	1,094	(60-Cycle)		
Holstein	20	P.V.	Cobden	118	643	North Bay	4,970	16,013
Huntsville	1,206	2,943	Cobourg	2,178	5,907	Patricia District		
Kincardine	683	2,483	Colborne	225	960	(60-Cycle)		
Kirkfield	25	P.V.	Deseronto	218	1,002	Sioux Lookout	299	1,967
Lucknow	425	856	Finch	88	396	Sudbury District		
Markdale	180	776	Frankford	135	1,095	(60-Cycle)		
Meaford	717	2,759	Hastings	98	823	Capreol	245	1,660
Midland	4,647	6,764	Havelock	135	1,103	Sudbury	9,639	35,812
Mildmay	130	764	Iroquois	208	1,123			
Mount Forest	476	1,936	Kemptville	343	1,230			
			Kingston	15,379	29,545			



# HYDRO *Lightens* The Way !

## *Electricity* is essential ! to commerce ■

● Imagine, if you can, a towering skyscraper deprived completely of electricity. It would be nothing but a bleak, dark block of stone, steel and concrete . . . lifeless, unserviceable.

It is Hydro that puts life into skyscrapers, warehouses and factories, or any other building. For electricity transforms darkness into light . . . moves elevators swiftly and silently . . . performs the hundred tasks that bestow upon a building the throbbing pulse of life.

Hidden in the walls of tall buildings are hundreds of miles of wiring . . . a veritable network, travelling from a master switchboard to

wherever light and power are needed. Busy telephones . . . chattering teletype equipment . . . business machines, and other mechanical, time-saving devices that serve the many needs of commerce . . . are powered by electricity.

In Ontario . . . in business and home . . . in industry and on the farm . . . Hydro lightens the way. It powers the machines that produce the goods we need . . . it brings us entertainment . . . it makes our work-day easier, our life more comfortable.

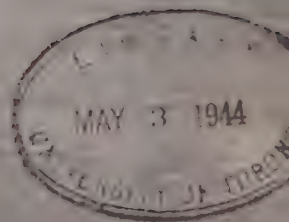
Plan for better living and more leisure after Victory, by taking full advantage of the benefits that can be yours through the use of electricity.



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



# HYDRO! News



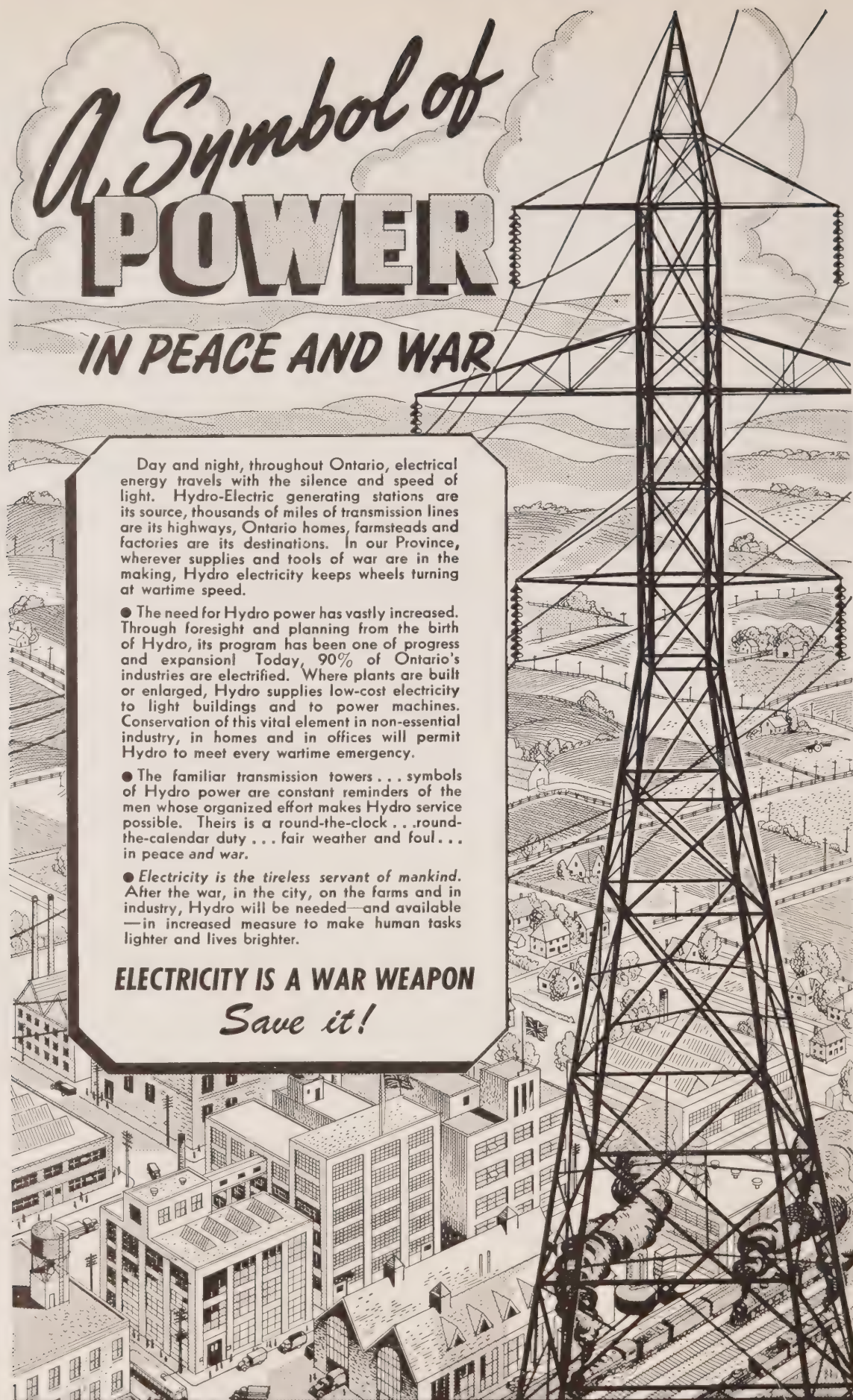
HAIRLINE  
ACCURACY

VOL. 31

MAY, 1944

NUMBER 5





# *A Symbol of* **POWER** *IN PEACE AND WAR*

Day and night, throughout Ontario, electrical energy travels with the silence and speed of light. Hydro-Electric generating stations are its source, thousands of miles of transmission lines are its highways, Ontario homes, farmsteads and factories are its destinations. In our Province, wherever supplies and tools of war are in the making, Hydro electricity keeps wheels turning at wartime speed.

- The need for Hydro power has vastly increased. Through foresight and planning from the birth of Hydro, its program has been one of progress and expansion! Today, 90% of Ontario's industries are electrified. Where plants are built or enlarged, Hydro supplies low-cost electricity to light buildings and to power machines. Conservation of this vital element in non-essential industry, in homes and in offices will permit Hydro to meet every wartime emergency.

- The familiar transmission towers . . . symbols of Hydro power are constant reminders of the men whose organized effort makes Hydro service possible. Theirs is a round-the-clock . . . round-the-calendar duty . . . fair weather and foul . . . in peace and war.

- *Electricity is the tireless servant of mankind.* After the war, in the city, on the farms and in industry, Hydro will be needed—and available—in increased measure to make human tasks lighter and lives brighter.

**ELECTRICITY IS A WAR WEAPON**

*Save it!*

**THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO**





## THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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### The Front Cover



**T**HIS month's front cover, entitled "Hairline Accuracy," shows Natalie Vouksanovitch at work in the H.E.P.C. electrical laboratory. When this "shot" was taken, "Tasha," as she is more familiarly known, was making very precise voltage measurements, using a potentiometer. The patience and accuracy exercised by the technicians in this type of work has resulted in the H.E.P.C. laboratories making outstanding contributions from time to time in the electrical, structural and chemical fields.

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May 1944

Number 5

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THIS IS really "hot stuff," somewhere in the neighbourhood of 2100 degrees Fahrenheit! This is the approximate temperature at which brass ingots are poured at the Dominion Arsenal, Lindsay, Ontario. This illustration shows an electric induction furnace pouring molten brass into an iron chill. These furnaces, twenty in all, have greatly increased the production of cartridge brass at this Government-owned and operated rolling mill.



## \* Page Three \*

### A DYNAMIC FORCE

**S**INCE the outbreak of the present war in September, 1939, Hydro power has been a dynamic force in the war-gearred structure of Canada and the Empire. As a result, Ontario has been widely acclaimed as one of the principal contributors in the "Arsenal of Democracy."

As this Dominion has rallied large forces to uphold the standards of freedom on the field of battle, the country's industrial output, on a per capita basis, has been one of the noteworthy achievements of the war. In the Province of Ontario, whose total production for all purposes is estimated at nearly 40 per cent of the output for the whole of Canada, there is a heavy concentration of war industries.

With its tremendous resources marshalled to serve the needs of these essential plants, Hydro, despite the many problems involved in furnishing power on a scale unparalleled in the history of Ontario, has steadily maintained its vital service.

One of the important plants served by Hydro is that of the Dominion Arsenal at Lindsay where the installation of twenty electric induction furnaces resulted in a tremendous increase in production.

Some interesting facts concerning the operations at this Ontario arsenal are to be found in the story "On Their 'Metal'" featured in this issue of Hydro News.

★ ★ ★

### A PRE-EMINENT POSITION

**T**O the men and women, whose skill and enterprise find expression in scientific research and achievement, the world of today is indebted for many advancements which are now interwoven into the pattern of daily life.

Day in and day out, technicians are engaged in the endless and exacting search for scientific principles and methods which will contribute new benefits and conveniences to the ever-widening field of human endeavour. It is true that science has been enlisted by all the warring nations to inflict death and destruction on a scale unparalleled in the history of man. These same powerful forces, however, can be harnessed to open

the way to a new and fuller life for all mankind when final victory is achieved.

In this realm of science, patience and accuracy are two cardinal principles in any undertaking, great or small. A striking indication of this fact is to be found in the character of the duties performed by the highly skilled technicians at the H.E.P.C. laboratory. An enlightening insight into the wide range of these activities is given in the article, "Yardsticks Of Accuracy," published in this issue of Hydro News.

Because of the high standard of work set, and maintained, since the inception of the laboratory in 1912, the Commission has attained a pre-eminent position in the structural, electrical and chemical fields.

In this, the first in a series of three articles on the work at the laboratory, attention is directed to the testing of structural materials.

★ ★ ★

### ON TO VICTORY

**G**OOD news, following reverses and dark days, is a tonic and, in the present instance, word of allied advances has brought not complacency but a nation-wide determination to work harder than ever for victory.

Perhaps this is the reason why Canadians as a whole are welcoming the Sixth Victory Loan as an opportunity to place the Allies still farther along the road to victory and the Axis correspondingly nearer defeat.

Although the need and wisdom of victory loan investments are definitely established, there are still those who do not invest to the limit of their ability. It is hard to understand how persons living in the comparative luxury of civilian security can hold back when those fighting for them are willingly giving everything they've got. It is not sufficient to be able to say, "Yes, I bought a bond." Everyone should review his finances right down to the last penny and increase his cash and instalment purchases of bonds accordingly.

As in the past, members of the Hydro family throughout Ontario will be united in their determination to "Put Victory First" at this crucial hour in the history of Canada and of the world at large.

# On their "METAL"



WHETHER OR not they feel "like a million" these young ladies are "sitting pretty" on a million pounds of copper ingots, which will eventually be fashioned into cartridges and shell cases.

**H**AVING "lots of brass" is sometimes very desirable. At least that is the general opinion of the people who live in and around Lindsay, and particularly those who are employed at the Dominion Arsenal.

This government owned and operated plant, with the aid of Hydro power, produces over four million pounds of brass a month, which, it is claimed, is the second largest output in Canada.

These and many other interesting facts were ascertained when Hydro News paid a visit to this rolling mill recently.

From 1922 until the outbreak of the present war these premises, now occupying about 250,000 square feet, were standing idle. At the outset of hostilities, however, the building was modernized and equipped to produce cartridge brass in quantity and to maintain maximum rolling

capacities. In the shell division the latest methods were inaugurated for forging and machining of various types of shells.

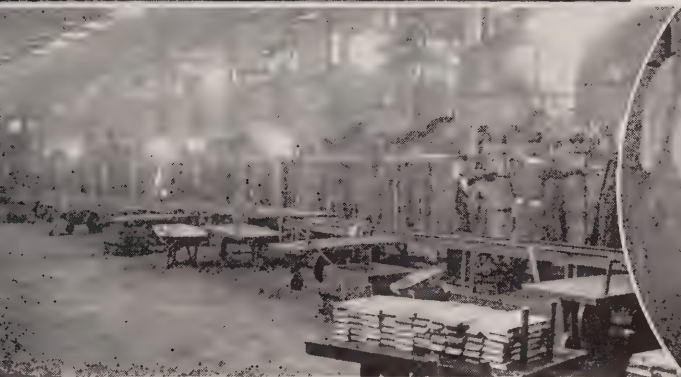
For the first two years of the war, the Arsenal operated 70 pitfires, using coke-fired crucibles. The output at each pitfire at that time, with a six-man crew, was approximately 130 pounds of brass an hour. But the accelerated tempo of this war demanded more than that. As a result Hydro power was harnessed and twenty electric induction furnaces were installed. These 80-kilowatt single-phase furnaces have their own auxiliary equipment in an adjoining bus gallery. With the same number of men who operated the coke-fired crucibles, the electric furnace turns out 1,200 pounds of brass an hour, or an increase of 900 per cent over the previous pitfire method and, according to statistics, has also effected a great saving in the cost of production.

*(Continued on page 6)*



"STOKING UP" an electric melting furnace, right, is a mighty important job and one that requires constant vigilance. Meters and temperatures must be closely checked so that the results will be just right.

SKIMMING OFF the dross—an operation which indicates that this particular charge is nearing the pouring stage.

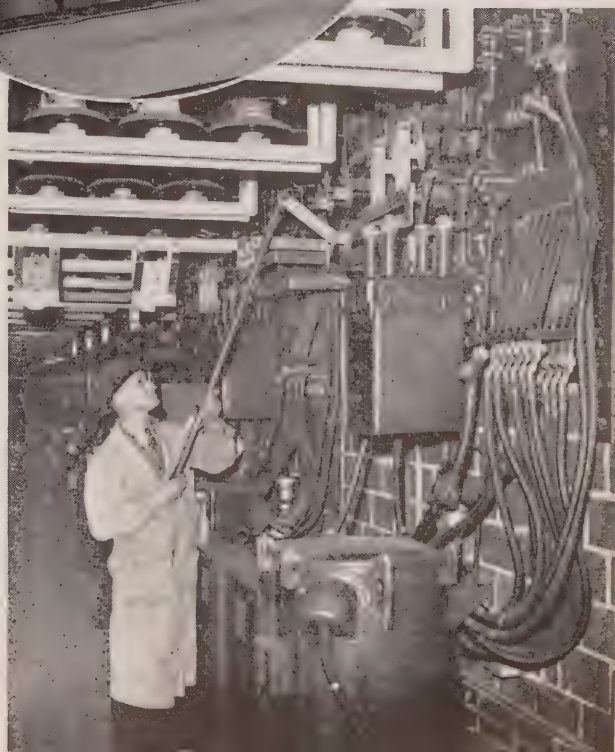
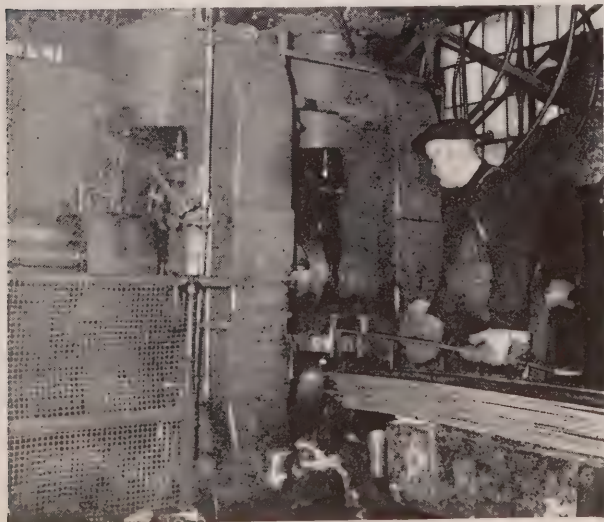


THIS IS a brass ingot which is being taken from a chill. There are twelve chills to a turntable, which is operated by a crew of six men.

THIS PICTURE, below, gives some idea of the electrical equipment necessary to operate induction furnaces. The chief electrician is shown closing a 550-volt switch.

THIS ILLUSTRATION shows 14 of the 20 electric induction furnaces installed at the Dominion Arsenal, Lindsay. These furnaces have greatly increased production.

A STRIP of brass is passed through the roller to bring it down to the required gauge.





## ON THEIR METAL

*(Continued from page 4)*

According to Colonel A. P. Deroche, energetic and genial manager of the Arsenal, one electric furnace will melt as much brass in one day as ten coke-fired crucibles, and this is accomplished with less effort and under greatly improved working conditions. "Generally speaking," he continued, "the brass produced by an induction furnace is more uniform in texture and the melting process more easily controlled."

In order to serve this additional furnace load, it was necessary for the Hydro Commission to build a new transmission line from the Port Hope tap, near Peterborough, to Lindsay. This energy, supplied by the H.E.P.C. through an outdoor high tension substation, consisting of three 1,250 kilovolt-ampere, single-phase transformers, steps the power down from 44,000 to 550 volts. Energy consumed by the rolling mills and shell shops—approximately 1,200 horsepower—is supplied by the Lindsay Hydro-Electric Commission. The Arsenal's entire consumption runs between 2,500 and 3,500 horsepower, with a peak load of close to 4,000 horsepower.

### Balance Load

Each furnace has a capacitor for power factor correction and auto-transformer with selective switches for various combinations of voltages. There are also disconnecting switches so that each individual furnace may be connected to any of the three phases. In this way, the load may be properly balanced at all times. A control panel includes the usual ammeter, wattmeter, voltmeter and a watt-hour meter for recording the number of kilowatt-hours consumed for each charge.

Those who are interested in technical features of the induction furnaces will find that they operate on the principle of a short-circuited transformer, the primary and core being designed to withstand the heat of the short circuit. The secondary winding, which is the melted brass, is enclosed in an insulator of heat-resisting material. This is connected with a large pot which holds the melted brass. The short circuited current, in the melted brass secondary, raises the temperature and, as the molten metal rises to the top, it is replaced in the secondary by cooler metal from the pot, which in turn is heated and rises. This process continues until the entire mass of metal in the furnace has reached a designated temperature and is ready for pouring into ingots.

Visitors who are permitted to inspect the Dominion Arsenal at Lindsay cannot fail to be impressed by its brightness, cleanliness and exceptionally good ventilation. Beside the battery of twenty electric melting furnaces they will find carefully weighed reddish copper and bluish-white zinc ingots ready for "cooking." It is not customary to use entirely new copper each time, but a 55 per cent virgin mix is combined with 45 per cent scrap. In this way all waste is eliminated.

Next, the copper is thrown in the furnace and starts melting. Some few minutes later a quantity of zinc is tossed in. The mix has now a ratio of 70 per cent copper to 30 per cent zinc. As zinc has a much lower melting point it, therefore, requires less heat. After the melt has reached the required temperature, the operator opens the furnace door and skims off the dross. Charcoal is used as a cover to prevent oxidation of the molten metal. As the door is opened, flames of various hues are emitted, sometimes yellow and sometimes green.

All this time, actually between 40 and 60 minutes, the temperature of the metal has been going up and up, until it reaches the neighbourhood of 2100 degrees Fahrenheit. At this point, meters conveniently located behind each furnace are carefully watched, and at the psychological moment, the heat is cut, and pouring operations commence. Just enough heat is left on to keep the metal pouring smoothly.

The molten metal is poured into iron chills. Each chill, about five feet in length and four inches across, holds approximately 90 pounds. There are twelve manually-operated chills to a turntable. The electric melting furnaces, which have a capacity of approximately one ton, are never completely emptied, as this would break the circuit. Anywhere from 800 to 1,000 pounds are left in the pot after each pour. This is commonly known as "a button," which, when the furnace is switched on, completes the electrical circuit that, in turn, melts the cold metal.

After the brass ingots have been removed, the interior of the chills are painted with graphite and lard oil, which, incidentally, smells awful. This greasing process prevents sticking and maintains a reducing atmosphere in the chill while the metal is poured.

### Annealing Necessary

Brass ingots are now sheared into lengths of about 36 inches, and taken to the rolling machines where they are rolled and then annealed. The rolling and annealing processes are alternated until the desired size and thickness have been obtained. Annealing is necessary to restore the ductility of the brass, as the rolling cold, works the metal, making it quite hard.

After the brass has been rolled to the required gauge, it is put in the presses for cupping. Some of these cups would fit over the top of your finger. Other presses turn out disks, having a circumference of less than six inches.

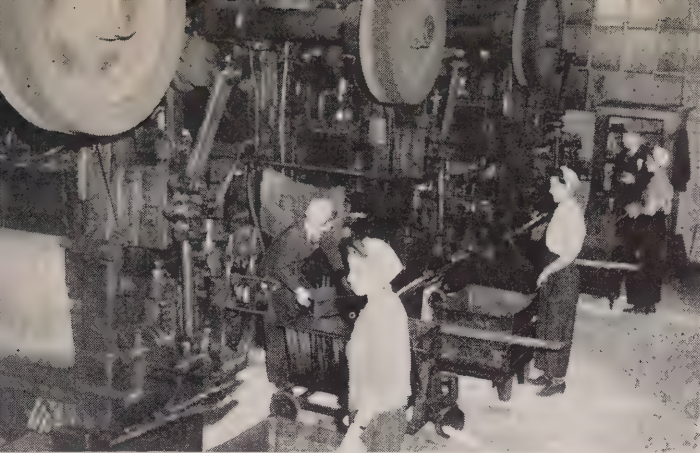
Cups and disks are then boxed and shipped to other plants where they are drawn into cartridge and shell cases.

This brief outline of the entire process might sound rather simple, but Clifford H. F. Cottee, chief metallurgist, assures any and all interested that there are a good many "headaches" between the time the copper ingots are received until the shiny "nuggets" are shipped out.

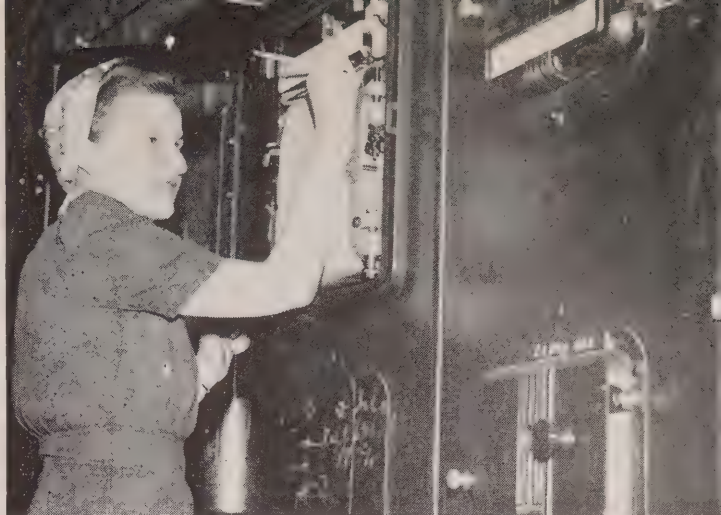
Another section of the plant is devoted to forging and machining shells. Manufacturing shells from octagonal

*(Continued on page 21)*





THIS ILLUSTRATION shows three of the presses which punch the brass into cups for cartridges.



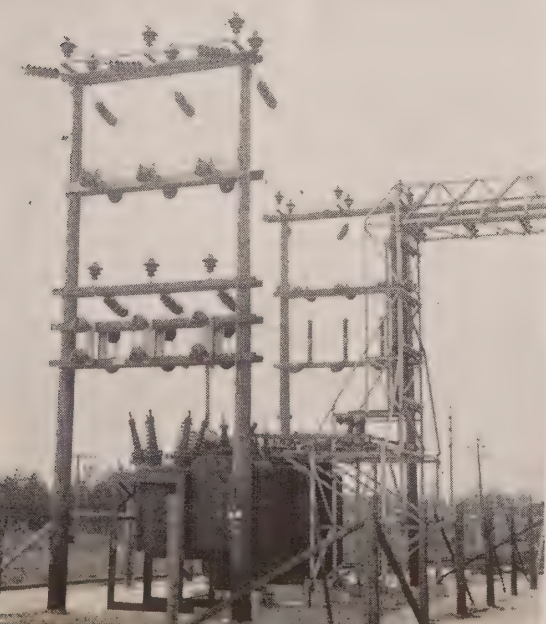
MARKING THE annealing oven charts is a full time job and keeps this young lady "out of mischief."



NOT GOLD nuggets, but still quite precious. These are shiny brass cups which will be shipped to another plant to be made into cartridges.



THIS MIGHT be a teller in any bank, but actually the "gold pieces" are brass disks being inspected before shipment. The disks will ultimately be drawn into shell cases.



ON THE left is Col. A. P. Deroche, manager, and on the right, C. H. F. Cottee, metallurgist, showing products of the shell division.

THIS HIGH tension H.E.P.C. substation, left, has three 1,250 kv-a single-phase transformers, which step the power down from 44,000 to 550 volts.



# POST-WAR LOAD BUILDING

Residential Rate Structures And Purchase Price Of Major Current-Consuming Equipment Stressed As "Two Prime Requisites"

By L. S. TREUGE,

The Windsor Utilities Commission, Hydro Division

THIS war will end, but when or how no one in authority has cared to predict. However, there is not one of us who does not hope it will be soon if he can be sure that this time we can win a truly victorious peace instead of another uneasy and uncertain twenty-five year armistice. And now, as the full weight of Allied Arms is brought to bear upon the foe, there is reason for sober optimism and the hope of victory in the not too distant future.



L. S. TREUGE

We have reached a point at which, without in any way diminishing our efforts in the prosecution of the war we should determine what shall be the contribution of the municipal utility in the building of the better world after the war. This better world, for which we all hope and long, cannot come into flower of its own volition. It cannot come to pass at all if all that we do is to hope and wait for the government to do something about it. The only way we can have, and the only way we deserve, to have a better world is for each and everyone to strive earnestly to build it.

## Presents Challenge to Hydro

In Ontario, Hydro is a great force for the social and economic progress of every section of the population, and the post-war era with its problems presents a challenge to Hydro. "Dona Naturae Pro Populo Sunt" is not just a Latin phrase on the Hydro crest. It is a solemn credo with which we must infuse every Hydro activity if we are to make our full contribution towards a truly better world—we must show that "the gifts of nature are for the people."

Each Hydro system and The Hydro-Electric Power Commission of Ontario will undoubtedly make an automatic contribution towards post-war employment when materials can be released to take care of the vast backlog of deferred maintenance which has accumulated during the war years. This will, of course, serve as an impetus to recovery, not only in the purchasing power it will provide, but also in the demands it will make upon electrical equipment manufacturing facilities. But this is not enough. Hydro's full contribution implies a conscious effort to provide employment. An active and intensive residential load building programme is one method which will provide employment if it can be extended to Hydro consumers in every income group.

In order to institute such a programme two prime requisites must be met, if we are to achieve any degree of success. The first concerns residential rate structures, and the second, the purchase price of major current-consuming devices.

## Maximum Inducement

We shall deal first with rate structures. At this time nearly every municipality in the Province is using a two-step residential billing system. Under this method the differential between the first and second rate steps is the prime incentive for many consumers to convert from former cooking methods to Hydro cooking. (In most modern homes, better lighting, radio and the smaller appliances invariably consume all current billed at the first rate step. Therefore, an astute load builder will base his "economy of operation", sales point on the fact that most electric ranges today operate on the low second rate). As it is generally acknowledged that the domestic electric range is the best and most consistent load building device, rate structures should be such as to offer the maximum inducement for a consumer to use a range. It will be seen that any post-war adjustments, from the standpoint of the load builder should be in the direction of lowering the second rate.

## A Concerted Effort

Our second point, the cost of major appliances, presents a problem which is not under direct Hydro control. However, all Hydro municipalities, as well as the Commission, can be the nucleus and inspiration of an organization composed of all agencies interested in the distribution of electric ranges. This organization, with the knowledge that at least 45 per cent of Ontario's electrified homes do not use electric cooking methods, may well offer the suggestion to manufacturers which might open this vast field of sales for electric ranges. If we attain a stability of prices after the war, approximating those of the previous years, we shall find that our chief sales field will be replacements for electric ranges already in service. This is not enough. It offers no scope for load building, and also little for full scale range manufacturing to provide maximum employment. Our solution for this situation will be to utilize every energy and device to have an electric range placed on the market which will come within the purchasing power of the lower income groups. This must and can be done if a concerted effort is put forward.

Once we have the range which anyone can afford, and the incentive features of our rate structures are as sharp as we can make them, we shall be ready for a load building programme which will fulfil every requirement of our duty to the people of this province in the post-war era.

*This is the first in a series of three articles which, in the words of Mr. Treuge, the writer, "offer an approach to the solution of post-war problems from the municipal standpoint."—The Editor.*



# CANADA'S CRERAR

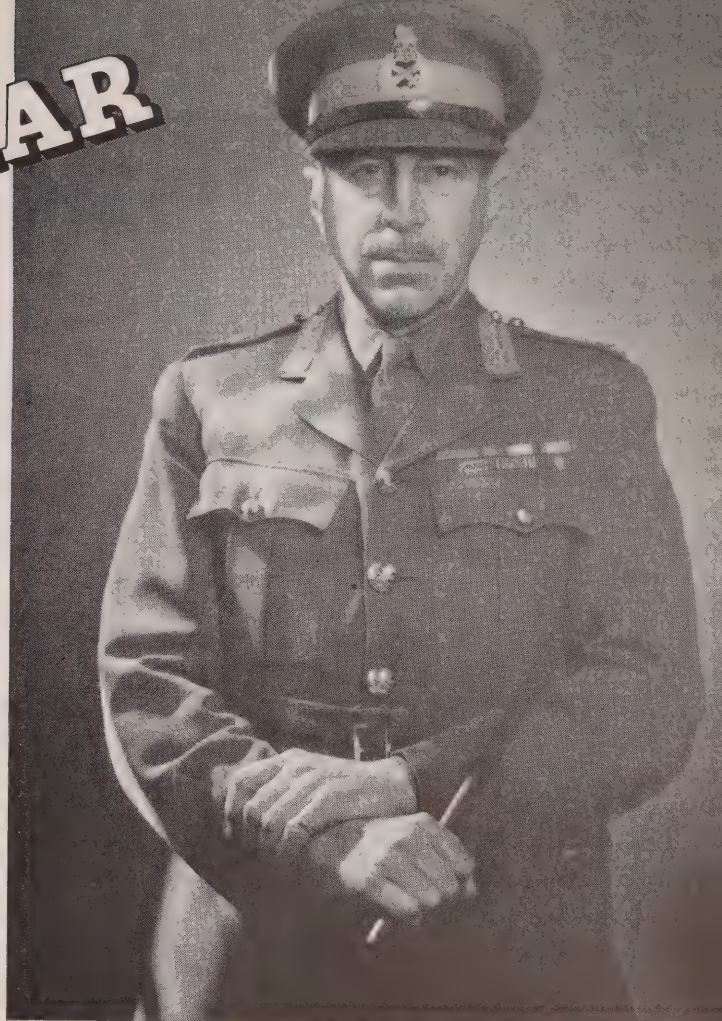
COMMANDER-IN-CHIEF CANADIAN ARMY OVERSEAS  
WAS FORMER HEAD OF H.E.P.C. LABORATORY

**L**IEUTENANT-GENERAL H. D. G. CRERAR, Commander-in-Chief of the Canadian Forces Overseas, was at one time head of the H.E.P.C. laboratories.

Several employees, who are still with the Commission, remember Lt.-Gen. Crerar and worked with him during the early days of Hydro in Ontario.

He joined the Hydro staff in 1912, having previously been superintendent of the Canadian Tungsten Lamp Company at Hamilton, and took charge of the laboratory and stores department. At that time the laboratory at Strachan Avenue was still under construction, and Mr. Crerar played a large part in its organization, choosing and designing the apparatus and equipment used at that time.

He remained with Hydro until July, 1914, when he



Copyright by Karsh.

THIS IS a recent study of Lt.-Gen. Crerar taken in England.

left to open his own office as a consulting engineer. With the outbreak of war he took his commission in the Canadian Field Artillery, and went overseas with the first contingent.

He served in France and Belgium, holding appointments of Brigade Major, Fifth Canadian Divisional Artillery, in 1917 and 1918, and C.B.S.O., Canadian Corps in France in 1918 and 1919, with the rank of Lieutenant-Colonel.

On his return from overseas he rejoined the Hydro staff as production and service engineer in 1919, and served in this capacity until the fall of 1920, when he left to resume his military career as General Staff officer at Ottawa.

In 1939 he was appointed commandant of the Royal Military College, from which he had graduated in 1909.

Shortly after the outbreak of the present conflict, he went overseas with the rank of Brigadier, and in 1940 was given the acting rank of Major General. He was brought back from England and appointed Vice-Chief, and later, Chief of Canadian General staff, and has now returned overseas as Commander-in-Chief of the Canadian Forces Overseas.

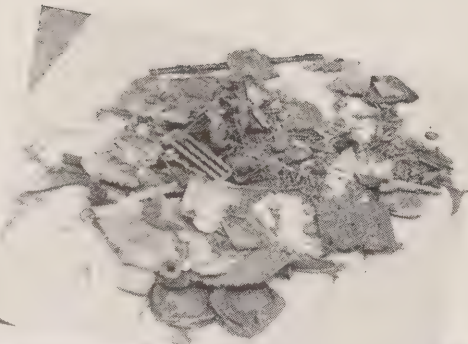
ON THE left is the group of employees who worked at the laboratories in 1914. Mr. Crerar is in the centre of the three sitting on the steps. Employees shown who are still on the Hydro staff are A. G. Plumptre, F. E. Cooney, R. B. Young, H. J. Muchleman and G. G. Cousins.



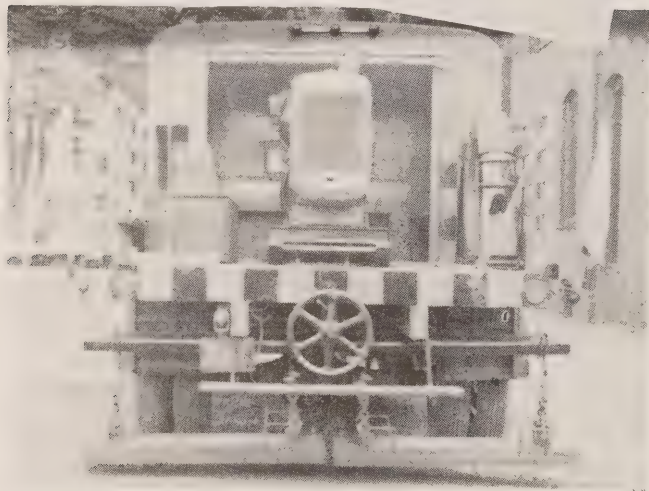


# *Nails* the Nails

RIGHT — Debris collected from the Murray street parking lot of the H.E.P.C. by the magnetic nail picker.



BELOW — Is a rear view of the truck. Electric power is generated by the motor mounted on the truck platform.



**M**OTORISTS who, for years, have been saying harsh things about nails which have been the cause of flats and blowouts, will learn with interest how electricity is now helping minimize this highway hazard

Equipment known as a "magnetic nail picker," assembled by the engineering department of The Hydro-Electric Power Commission of Ontario for the Department of Highways, is now in service on Ontario's highways, gathering up loose nails and other ferrous scrap.

Patterned after the design of the equipment originated by the Texas Highways Department, this nail picker is reported to be doing a fine job. In one State of the Union, the records show, two trucks collected over 84 tons of nails and scrap in two years, representing a saving in possible damage to tires which cannot be estimated in the terms of dollars and cents.

R. E. Jones of the electrical engineering department of the H.E.P.C., gave Hydro News the following interesting description of the equipment and its functions:

A pair of longitudinal magnets are placed across the rear of a truck at a height of 4" above the ground. Power is supplied by a gasoline engine driving a direct current generator.

Each magnet consists of an inverted steel channel 48" x 15" x 2 1/4". A steel core, 2" x 2 1/4" x 36" with rounded ends, is welded to the centre of the inside of the channel. Ends are welded on the channel and the edges of the channel are machined.

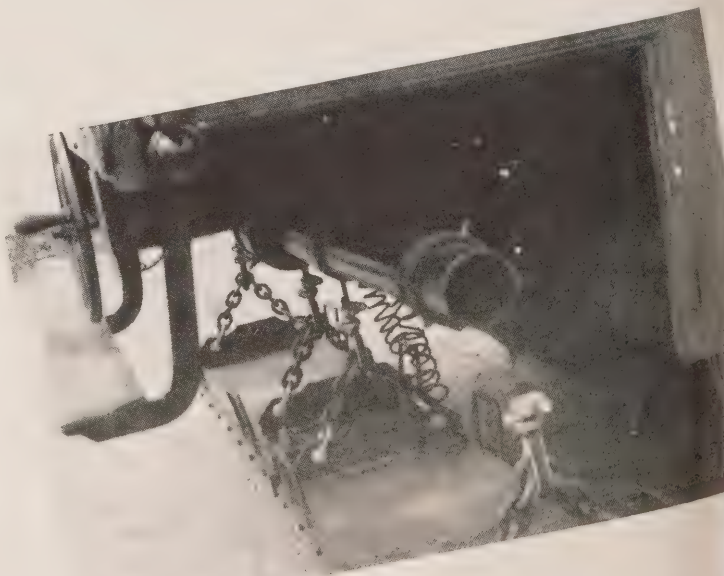
A 1/4" brass plate with a 1/8" ebony asbestos gasket is placed over the open side of the channel and fastened to it with brass screws. Steel angles are placed over all four edges to protect the brass screws from rocks, and other road debris.

A 4-cylinder 18 h.p. 1450 R.P.M. governed gasoline engine is mounted on a steel base complete with water and gasoline tanks. On the same base is a 5 K.W. 125 volt direct current generator. This is direct coupled to the engine. Above the generator on a pipe frame is a panel with voltmeter, ammeter, field rheostat and main switch and fuses.

The magnets are adjusted to approximately 4" above the roadway by means of a worm geared lowering device.

The generator is started and the truck proceeds at about 6 miles an hour. A 15 watt lamp near the driver's window acts as a "Tell-tale" to indicate that power is being supplied to the magnets.

At intervals the truck is stopped, a folding canvas stretcher is placed below the magnets and the power is turned off. The accumulated iron and steel scrap drops onto the canvas and is removed before the power is again turned onto the magnets.



THE illustration on the right shows the electro-magnet suspended a few inches above the road surface.

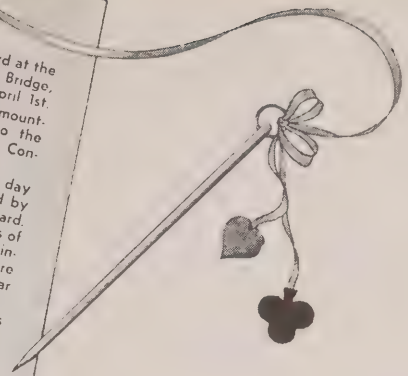


# Bridge à la mode

THERE was a capacity crowd at the H.E.P.C. Ladies' Annual Bridge, no foolin', though it was April 1st. Proceeds from the event, amounting to over \$150, will go to the Ontario Hydro-Electric Club's Consolidated War Services Fund.

One of the highlights of the day was a Remake Revue, sponsored by the Wartime Prices and Trade Board. This turned out to be more or less of a 'steal' from father's wardrobe, including his hat. Other creations were made from old curtains and pre-war evening dresses.

The accompanying illustrations give interesting camera impressions of this popular event



MEMBERS OF the O.H.E. bridge committee, reading left to right, Lois Brittain, Mary Jane Oulahan, Margaret Gahagan, Phyllis Foreman, Helen Dunlop, Muriel Hambly, Bruce Irvine, Rhoda Browne and Margaret Leworthy.



THIS PHOTOGRAPH shows Mrs. Hogg, wife of Dr. T. H. Hogg, chairman and chief engineer, H.E.P.C., presenting a lucky number prize.



IN THIS picture are Hydro mannequins displaying remake creations. They are, left to right, Mary Snailham, Muriel Hambly, Dorothy Patten, Mary Jane Oulahan and Nancy Watt.



# A VISIT TO Lindsay



IMPORTANT MATTERS were being discussed when the Hydro News photographer snapped these members of the Lindsay commission. They are, left to right, H. S. Johnston, chairman; J. G. Baldwin and W. E. Reesor, manager.

**G**ATEWAY to the Kawartha Lakes and Haliburton summer resorts, Lindsay, with the outbreak of war has become the second largest brass-producing center in the Dominion.

It is the county town of Victoria County and one of the most progressive municipalities in the district. It was named after Major Lindsay, an engineer, who surveyed the original townsite.

A great deal of credit for the progress of the district must be given to the pioneers who were not satisfied with the old ways, and were prepared to gamble their life savings on ventures, of which they possibly knew very little.

Lindsay has had the benefit of electricity since 1889, when Benjamin Franklin Reesor, a pioneer of Dutch Menonite stock, built and operated the first steam driven electric plant in the district.

This same enterprising pioneer, a few years later, installed the hydraulic plant at Fenelon Falls, which has been supplying power to the district since 1900. One of the first transmission lines of the district was erected to bring power from this plant at Fenelon Falls to Lindsay.

Later the Seymour Power Company acquired this plant and incorporated it and the town of Lindsay with the Trent Valley system. In order to give better service to Lindsay, this company built a 44,000-volt line into the town and erected a substation.

## Commission Inaugurated

Hydro first entered Lindsay in 1916 when it acquired, through purchase, the Seymour Power Company. The Hydro-Electric Power Commission continued to own and operate the municipal distribution system until 1928, when the town entered into negotiations to purchase the system.



Lindsay was the first town of all the municipalities, who formed part of the old Seymour Power Company system, to approach the Commission for permission to purchase its own system. Subsequently a local Hydro commission was set up, of which the members were: mayor R. I. Moore, chairman; John McCrae, J. Frank Maunder, W. E. Baker, and A. Keele Gregory, commissioners.

### Load Doubled

Within the last few years the Commission has duplicated the old 44,000-volt line, and the plant at Fenelon Falls is used to feed power into the transmission lines serving the district. Lindsay is the hub of a fertile farming district to the south, and the transmission net work of the rural power district spreads out over a country to the north dotted with innumerable lakes on whose shores thousands

of city dwellers spend their summer vacations.

Since the outbreak of hostilities Lindsay has almost doubled its load and is now using approximately 3,427 horsepower. The distribution system has approximately 30 miles of transmission lines and serves 2,237 domestic, 339 commercial and 70 industrial consumers. Among the leading industries are the Dominion Arsenal, Horn Brothers Woollen Mills, Knitters Limited, Canadian Industrial Alcohol Company, Kawartha Lumber Company, Sylvester Manufacturing Company and Silverwood Dairies Limited.

The citizens have co-operated with the local commission in the conservation of power, with the result that a saving of approximately 10 per cent has been effected. This power has speeded the work in the factories of the district, which

*(Continued on page 19)*



THE "SUPER-EFFICIENT" staff at Lindsay took just enough time off to have this picture taken.

THIS ILLUSTRATION shows the "trouble shooters" just starting out to answer a call. They are, left to right, Wilfred Hogan, Art Duke and Tom Cochrane, foreman.

# ***YARDSTICKS*** of Accuracy

**A**CCURACY to the "nth" degree. This is the fundamental principle which has been associated with precision tests conducted at the H.E.P.C. laboratory since its inception in 1912.

As a result, the Commission has attained a pre-eminent position in the structural, electrical and chemical fields in this province.

Improvements and improvisations have been made from time to time in many of the instruments, and these advancements are attributed largely to an intense interest on the part of the technicians in finding ways and means of facilitating their daily tasks. In some instances this work has been of such a high calibre that patents have been issued.

There are numerous phases and angles from which a story on this subject can be written. This article deals principally with certain work which is being done in the structural materials laboratory.

To begin with, before you can measure anything, you must have a suitable unit, and although records with regard to the origin of standards of weights and measures are very scarce, it has been pretty well established that the earliest methods, of which we have knowledge, was the ancient

***T*****HIS is the first in a series of three articles directing attention to the important work which is being done at the H.E.P.C. laboratory to maintain the accuracy of precision testing instruments and in the testing of materials.**

Egyptian system which involved the use of the cubit and the foot, taken from the proportions of the human body. This could hardly be called precise measuring. But time marches on and great strides have been made in this particular field until now instruments capable of measuring to two-millionths of an inch, a millionth of an ohm or within a few hundredths of a degree Fahrenheit, as the case may be, are in constant use.

## **Thousands of Tests Annually**

As many thousands of tests are conducted every year for the purpose of predetermining the performance of structures and materials, it will be readily seen that it would be impossible to list them in detail. However, the Commission's laboratory is equipped for a wide variety of structural, electrical and chemical tests.

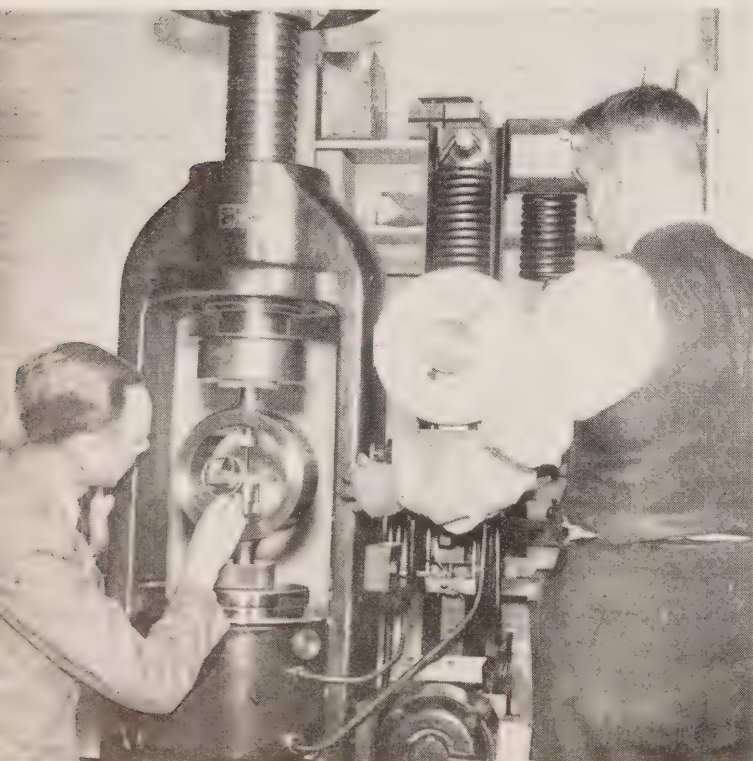
Not only does the lab test materials, but it checks manufacturers' designs and, in this way is able to suggest improvements. This is particularly true with respect to cable clamps, line hardware, joints and cables.

Another interesting feature is the microscopic examination of metals whereby the crystal structure of a material may be examined in detail and photographed for report and record purposes. This method is very helpful in establishing the quality of the metal and in determining its suitability for use in the design of the particular apparatus on hand. It is also of great assistance in ascertaining the cause of failure of equipment in service.

One of the highlights of the lab's work is that the results obtained from the various experiments are available, not only for the benefit of the H.E.P.C., but also for the good of industry generally, and information is freely given to the manufacturer for the purpose of improving his products. In this connection many outside companies work in concert with Hydro technicians.

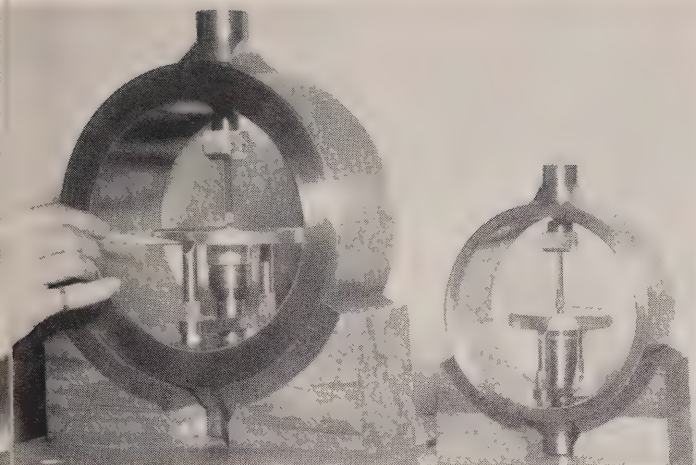
## **Co-operative Research Work**

Another important and rather unique part of this department's routine is the research work done in co-operation with every department in the Commission. This is arranged under a committee of five department heads, with nineteen sub-committees working on specific projects. These sub-committees, comprising representatives from the laboratory,



IN THIS illustration H. C. Ross (left), assisted by W. E. Scott of the structural and materials lab, uses the proving ring to make a compression test on a hydraulic compressor.





THESE PROVING rings are used at the H.E.P.C. laboratory to verify the accuracy of static-load testing machines at any load of 100,000 and 1,000 pounds, respectively.

engineering, purchasing, operating departments and sales promotion—the idea being that lab technique and field experience are combined to get the best results—cover such problems as vibration of line conductors; remote control of loads; rural applications of electricity; wooden transmission structures such as poles; heating elements (cooking); paints and protective coatings; petroleum products; electrical insulation; domestic hot water tanks; concrete and masonry materials; electric welding; radio interference; illumination; the application of electronics and others.

The Research Committee, which has been in existence for eleven years, publishes a report once a year, and this report is made available to associates and companies in all parts of the world. In this regard, it is interesting to note that the Hydro laboratory is in close contact with the National Research Council of Canada, and has representation on several of the Council's research committees. Close contact is also maintained, through membership, with the technical work of the major engineering societies in Canada and the United States. In this way, information, on a larger scale, is available when specifications are drawn up.

Many outside companies all over Ontario utilize the Commission's testing facilities. If possible these tests are conducted on the premises, but when large pieces of equipment, weighing perhaps hundreds of tons are up for inspection and verification, it is obviously necessary that the required testing equipment and tester be taken to the job. This service rendered by the lab is widely used and much appreciated and, here again, the H.E.P.C. high standard of accuracy and efficiency comes to the fore.

#### Portable Equipment

One of the pieces of portable equipment which is taken to outside companies, is the proving ring. This type of equipment is used to verify the accuracy of static-load testing machines in the structural materials laboratory, and it is also to be found in the laboratories of other organizations. It consists of an accurately machined ring of heat-treated steel which deforms elastically when a compression load is applied to its external bosses. Deformation is measured by

means of a vibrating reed and precision micrometer that form part of the instrument. As the deflection of such a ring is directly related to the applied load, the device offers a convenient means of determining the errors in a testing machine once this relationship has been accurately established by dead weights at the Bureau of Standards. At the H.E.P.C. laboratories are two of these rings, capable of verifying the accuracy of testing machines at any load between 1,000 and 100,000 pounds.

A similar, but older type of instrument, is the mercury standardizing box. This device can be used for both tension and compression loads. It has a hollow cylinder completely closed and filled with mercury. At one end and on one side the hollow space is connected with a capillary glass tube, which ends in a small bulb. On the other side, connected to the box, is a plunger which forms part of a micrometer screw. When load is applied in compression, the box deforms elastically and the mercury is expelled into the glass tube. Readings, which are taken from the scale of the micrometer stem, record the measure of the volumetric elastic strain of the hollow cylindrical box, and hence a measure of the load applied by the testing machine. This instrument is capable of measuring loads up to 100,000 pounds.

#### Design Precision Instruments

It is sometimes necessary for members of the laboratory staff to design precision instruments for special applications in test and research work. An example of such an instru-

ANOTHER INTERESTING piece of equipment which is mentioned in the accompanying article is the mercury standardizing box. Like the proving ring, this older type of instrument can be used to make a compression test. The above illustration shows E. J. Mason of the laboratory staff taking a reading.





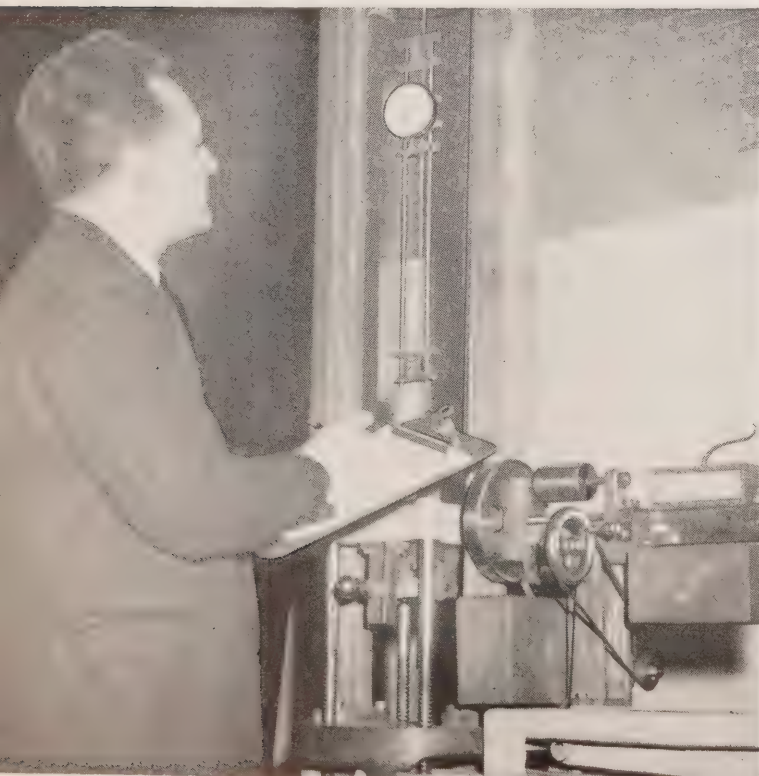
ment is an extensometer designed to meet H.E.P.C. requirements in the testing of conductor materials. This device is used to determine the elastic properties of wire. Due to the long gauge length involved and the extra travel provided in the instrument, it is possible to ascertain with great precision the properties of wire when stressed well into the range where plastic deformation takes place.

Testing and research work in the structural materials laboratory are important in determining the physical and mechanical properties of materials used in the Commission's construction and operation. Materials covered by these tests include ferrous and non-ferrous metals, concrete, masonry materials, soils for earth dam construction, wood, rope, leather, rubber, textiles, wire, cable, insulating and many other materials. Generally these materials are tested prior to fabrication but, in many cases, performance or proof tests are made on completed equipment or structures. These laboratory tests serve largely to predict the behaviour of materials under applied load whether in tension, compression, bending or shear. Other tests are made to determine such properties as hardness, fatigue, permeability, absorption, durability and density. It is essential that the equipment used in making such tests be maintained at the highest degree of accuracy and within close limits. It is the established practice in the laboratory to verify all testing machines at frequent intervals.

## Under Capable Direction

The men under whose able direction this precision work is conducted are William P. Dobson, chief testing engineer,

D. C. WATT, of the structural and materials laboratory, records a reading of the elastic properties of wire. The testing instrument used is known as an extensometer, which is designed to meet H.E.P.C. requirements.



W. P. DOBSON and R. B. YOUNG who direct operations at the H.E.P.C. laboratory. Both men are widely known in Canada and the United States for their work in the electrical and structural fields respectively.

and Roderick B. Young, assistant chief testing engineer. Both these men are widely known in Canada and the United States, particularly for their activities in the electrical and structural fields respectively.

Since coming to the Hydro in 1914, Mr. Dobson has seen the laboratory grow from a small beginning to its present dimensions. In addition to the administration of research and testing in the department, he has, within recent years, devoted much time to standardization work and electrical safety regulations. He is chairman of the committee which prepares and revises the Canadian Electrical Code. He is also chairman of the Approvals Administrative Board of the Canadian Engineering Standards Association, and is a member of the executive committee of that Association. He represents Hydro on several committees of the National Research Council of Canada, and the American Society for Testing Materials. He is a Fellow and past vice-president of the American Institute of Electrical Engineers and a member of its Standards Committee. He is a member of the Engineering Institute of Canada; Mathematical Association of America; Senate of the University of Toronto; International Association of Electrical Inspectors; Professional Engineers of Ontario, and is president of the Dominion Council of Professional Engineers. Shortly after graduating from the University of Toronto, he was granted the Alumni Research Fellowship in Electrical Engineering, and in 1942 he was the recipient of the University of Toronto Engineering Alumni Medal for technical achievement.

Mr. Young has been with the Commission since 1913, and has been closely linked with the development of the laboratory to its present pre-eminent position in Ontario.

He graduated from the University of Toronto in 1913 with a Bachelor of Applied Science degree, and in 1918 received his Civil Engineering degree. He is a member and past president of the American Concrete Institute; a member of the American Society for Testing Materials, Engineering Institute of Canada, Professional Engineers of Ontario, Canadian Engineering Standards Association, and an honorary member of the National Ready-Mix Concrete Association.

Mr. Young has specialized in the field of concrete technology and manufacture, being the author of many papers and articles in this connection. In 1928 he won the Thomas Fitch Rowland prize of the American Society of Civil Engineers, and a few years later the Leonard C. Wason medal of the American Concrete Institute.



# LET'S ALL "DIG IN"

## President Appeals For Increased Registration In Victory Garden Campaign

FRESH and processed vegetables will be scarce during 1944, government agencies have already warned the public and are appealing for an increase in victory garden produce this year.

J. A. Goldie, speaking at the Horticultural Club meeting on April 14, declared that the Dominion Government is asking for a 10 per cent increase in home grown vegetables.

"There are two reasons for the anticipated shortage," Mr. Goldie said, "there will be a shortage of labour available to commercial growers, due in part to the induction of an additional 98,000 men into the armed forces. Because of the lack of labour, growers will be forced to reduce the acreage devoted to vegetable growing. Added to this will be the fact that a larger percentage of the commercial production will be processed and held ready to supply the needs of the occupied countries, which we confidently expect, will be liberated this summer when the invasion of Europe commences," he declared.

President of the Horticultural Section of the Ontario Hydro-Electric Club, A. B. Hayman, also added his own personal appeal to all who might have a chance to grow vegetables.

"Don't hesitate! Don't let the weeds grow in your yard or in that vacant lot! Even though it will take a little extra time to prepare the land, to plant and care for the growing vegetables, you will be amply repaid in many ways, and in addition you will be serving your country.

"We in Canada must have Victory Gardens. Send in your registration, join the campaign, and help to boost a worthwhile project that will encourage others to do their part," he urged.

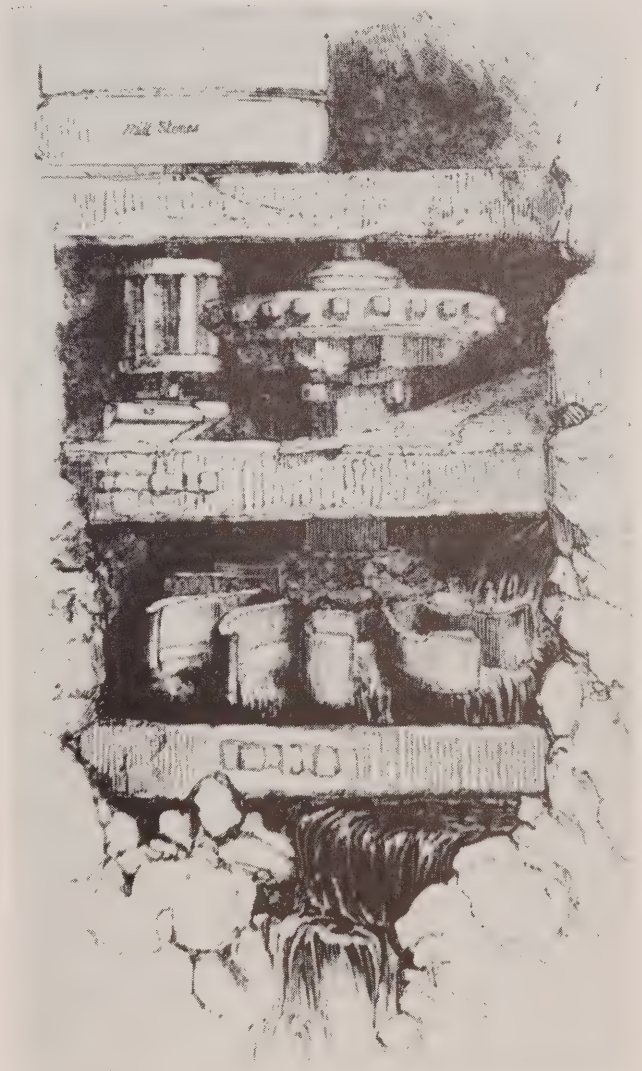
Hydro Victory Gardeners in 1943 worked on an average 4,700 square feet of land and produced an average of \$65 worth of vegetables. Many gardeners built storage accommodation and have to-day a supply of fresh vegetables for their table.

Gardeners received a return of 70 cents for every hour they spent in the garden, according to statistics prepared from returns made to the Victory Garden committee.

The Committee is again this year prepared to render the fullest possible service to victory gardeners, and the small fee being charged will be amply repaid through group purchases of supplies and in instructional material available to members. The folders issued to last year's gardeners, supplemented by additional information on food values, canning and storing will be distributed again this year.

The Commission itself is giving every encouragement to the victory garden campaign and would like to see every employee who possibly can, participate this year.

Let's all "dig in" and grow more in '44.



ON the Island of Mull, which is the largest island of the inner Hebrides, Argyllshire, Scotland, the ruins of a horizontal mill can be found, constructed in the native rock of the district, utilizing water power.

The above illustration shows how the mill was built, and it will be noticed that the blades of the water-wheel are curved in much the same manner as the water-wheels of our present generators, which develop thousands of horsepower.

The upper works driving the millstone are of wooden construction.



## WINGHAM MANAGER RETIRES

**HERBERT CAMPBELL**, who served as manager of the Wingham Public Utilities Commission for over thirty years, has retired from active duties.

Starting with the Wingham utilities in 1909, he later joined the Canadian Army and went overseas in the last war as a lieutenant and came back with a major's rank. On his return, he resumed his duties as manager of the local commission, which office he held until his retirement at the end of last month.

In 1929 he took on the additional job of superintending the Wroxeter rural power district. Before joining the staff of the Wingham commission, Mr. Campbell taught school in the Exeter district.

In his leisure hours he will no doubt add to his laurels as a golfer and gardener.



## RECEIVES C.E.A. MEDAL

Quick action in applying artificial respiration, resulting in saving the life of a fellow employee, was recognized recently when **FREDERICK JOHN REEVE** was the recipient of the Canadian Electrical Association resuscitation award in the community hall at Abitibi Canyon.

Mr. Reeve had saved the life of O. J. Adams who suffered a severe electrical shock during a line switching operation at Timmins.

The presentation was made by J. MacLellan, of the H.E.P.C. Employees Relations Department before the members of the colony and carried to employees in outlying stations over the system telephone.



## A VISIT TO LINDSAY

*(Continued from page 13)*

are turning out shells, blankets, yarns and industrial alcohol for the war effort.

A programme of debt reduction has been followed for a number of years, with the result that today it has been reduced to \$36,000, and the commission is planning to retire this amount in 1948.

Among the nationally known figures who were born in the district are the late Sir Sam Hughes, Minister of Militia in the First Great War; Hon. Albert Matthews, Lieutenant-Governor of Ontario; Hon. Leslie Blackwell, Attorney-General of Ontario; the late Sir Joseph Flavelle, and Hon. Leslie M. Frost, Provincial Treasurer.

Hydro affairs in Lindsay are under the direction of H. S. Johnston, chairman; John G. Baldwin, C. V. Sleep, R. J. Morris, and mayor Charles Lamb, commissioners, and Walter E. Reesor, manager.

## "HEAR!" "HERE!"

The chicken, which stepped out of the egg and onto the front cover of last month's *Hydro News*, really started something when she pertly announced, "Hear I Am Folks!"

Some readers were puzzled; some wondered if we were trying to be subtle and others thought to commiserate with us, remarking that, after all, a baby chick could hardly be expected to make a distinction between "here" and "hear."

Now that calm has been restored, and after due reflection, we feel we could not permit an innocent chick to set out on life under a cloud. We have evidence to show that "Mary" used the word "here" in the original text. However, in the process known as surprinting, she and all her good friends were "crossed up."—The Editor.



# AROUND THE HYDRO CIRCUIT

## LINDSAY'S CHAIRMAN

**HARRY SINCLAIR JOHNSTON**, chairman of the Lindsay Hydro-Electric Commission, was born in Uptergrove, Ontario.

Receiving his early education in Beaverton, he later attended commercial school in Toronto, and is now manager of the Lindsay branch of Silverwood Dairies Limited.

Although this is Mr. Johnston's first year as chairman, it is his fourth year on the commission.

He is quite active in service club work, and at one time did a lot of motoring, but that was before gas rationing came into effect.

## MEET THE MANAGER

**WALTER EBY REESOR**, manager of the Lindsay Hydro-Electric Commission, was born in Cedar Grove where he received his early education, later graduating from Newmarket High School.

In 1905 he became manager of The Light Heat and Power Company and when that concern was purchased by the Seymour Power Company, he was retained as manager and continued in that capacity when Hydro acquired the Seymour interests.

While attending school he was interested in lacrosse, and now is particularly interested in curling.

## LINDSAY COMMISSIONER

Serving for his second year on the Lindsay Hydro-Electric Commission is **REUBEN JOHN MORRIS**, who was born in 1889 at Bowmanville, Ontario.

His special interest is in gardening—perhaps he grows tobacco.



## COMMISSIONER AT LINDSAY

A native of Lindsay, **JOHN GEORGE BALDWIN**, has served for eight years on the Lindsay Hydro-Electric Commission, and was chairman for two years.

A graduate of Lindsay High School, he is now a coal dealer, and his special interests are curling and horses.

## LINDSAY COMMISSIONER

**CECIL V. SLEEP**, who was chairman of the Lindsay Hydro-Electric Commission last year, has served the municipality for the past four years. He was born at Seagrave and attended the Port Perry High School.

When he can take time out from selling insurance, he plays the "Roaring Game," and is also interested in service club work.



## LINDSAY'S MAYOR

**CHARLES LAMB**, has served on the municipal council for the past eight years, having been three years as councillor, two years as deputy reeve and mayor for the past three years, when by virtue of his position he has been a member of the Lindsay Hydro-Electric Commission.

He is a graduate of Port Perry High School and is interested in curling and driving horses.



## EMIL VLOEBERGH'S PASSES

**EMIL VLOEBERGH'S**, formerly foreman of the machine shop at Strachan Avenue, died recently.

A native of Belgium, Mr. Vloeberghs joined the H.E.P.C. staff in 1911, and shortly after war broke out, went overseas.

On his return in 1919, he rejoined the staff as foreman in the machine shop, which position he held until his retirement in January, 1944.



**T**HERE'S a lot of sense to that Canadian slogan, "Eat it up—Wear it out—Make it do." So whether your electrical household equipment is new or old, war conditions demand that you keep it "on active service." And that brings me to the point of telling you how best to care for some of these appliances in everyday use in your home.

I'm talking particularly of the washing machine and iron, but one rule applies to all equipment—always read and follow the instructions which the manufacturers gave you.

Now for the suggestions, and first on the list is that great labour saver—the vacuum cleaner. There are two essential points to observe in this case. First, the emptying of the dust bag after each cleaning. Occasionally, it should be turned inside out and cleaned with a whisk, but never washed. At the same time, the attachments and nozzle should be inspected and cleaned regularly. Secondly, the motor should be oiled and cleaned regularly according to the manufacturer's directions. Some motors of course, should not be oiled at all, while too heavy or frequent oiling can ruin others.

And next, the electric washing machine. If the motor does not operate it may be due to one of the following reasons: the wall plug may be loose, this may be remedied if you spread the prongs outward; or the fuse may have burned out, in this case, replace the old one with one that has the same ampere rating; or, another thing, there may be too many clothes in the washer. If so, remove enough so that water circulates freely.

If the wringer does not wring clothes dry enough, the regular procedure is to check: the roller pressure—it may not be great enough—tighten rollers together; or, the bottom roller may have worn a groove, by not spreading the clothes through evenly; heavy or sharp buckles and buttons may cut rubber or raise the roller. Be careful to put clothes through so that the part with these attachments is at the end, but before it goes through, stop the wringer and release the pressure of the rollers.

If clothes come out of the washer grey looking, consider the following points: not enough soap is being used—too little soap gives poor washing results, and on the other hand, too much is wasteful. Pour in a cupful of soap, start agitator and keep adding until two or three inches of suds have been formed. Add more soap in solution if suds die down. Another reason may be that the electric washer is not being allowed to operate long enough—8 to 10 minutes is the average time; or the water may be dirty—two loads of clothes can usually be washed without changing water,

if clothes are not too dirty; not enough water—fill tub to water line or top of agitator; too many clothes in the washer. A water softener such as caustic soda is necessary in districts which have hard water. And a bleach may be used in rinse water for clothes, although sunshine is the best whitener.

The ironing job follows washing, and here again the homemaker prevents trouble by regarding the use and care of the electric iron. If the iron does not heat, look at: wall plug—it may be loose; or the prongs should be spread outward; a fuse may be burned out—if so, change fuse with dry hands; a cord may be defective—replace it with another one.

Sometimes the iron handle gets too hot. Most electric irons are designed to stand on their heel rests. If they are placed on the flat side or on edge, some handles get hot because it is not the idling position.

If the iron scorches clothes, pay particular attention to ironing speed. It may be too slow, or the wash may be too dry. If it is an automatic iron, the thermostat may be set too high. Try lower setting. If iron is non-automatic, it has been left on the circuit too long.

When the iron discolours, starch may have been left on sole plate, or the iron may have been used on garments whose colours ran. All stains on chrome plate iron may be removed by rubbing cool iron with a soapy cloth, and then polishing with a dry cloth.

An iron may stick to certain materials. Particular precaution should be taken to use a lower temperature on rayons and viscose materials; to thoroughly and evenly dampen the starched clothes; to clean the sole plate after ironing starched clothes; to thoroughly rinse clothes, since traces of soap will cause sticking.

Attention to the electrical labour saving devices during the house-cleaning period will be well worth while. When your labour-savers do such a splendid job for you, you'll have to admit that it's "half-the-battle." Do a job for them and they will do a big job for you.

## WHAT IS VITAMIN C?

Vitamin C is the body welder."

Millions of tiny cells make up the human body. Vitamin C is the substance that makes the structure stick together. Without it, the cells tend to fall apart, especially the walls of small blood vessels subjected to the pressure of blood pumped by the heart. When this occurs, blood seeps into the tissues, as in "bleeding gums." Then there is an inflammation and often infection in the surrounding area. Thus Vitamin C is important to good health.

During the time of early explorers of this continent the long-termed lack of ascorbic acid (Vitamin C) caused a skin disease known as scurvy, and even to-day similar cases are reported.

Best Canadian sources of this vitamin are raw cabbage, baked potatoes, raw turnip and raw tomatoes; especially good are oranges, lemons and grapefruit. Because Vitamin C is easily destroyed in cooking, it is important to eat raw vegetables in salads, and never skimp the tomato fruit juice rations.



## 2000 YEARS BEFORE HYDRO



*I*T started after Cassius and his associates had been successful in "liquidating" Julius Caesar on March 15, 44 B.C.

Mark Antony donned his best toga and set out on a business trip to Egypt. When he arrived in the land of the pyramids, his itinerary included a visit to the regal residence where he was ushered into the presence of Queen Cleopatra.

*It was another case of boy meeting girl!*

At that time, the folks did not enjoy the benefits of electricity; and so, it is recorded, the couple made the best of things of an evening by the light from fire baskets.

The accompanying illustration is an artist's impression of an evening tête-a-tête between Antony and his lady friend.

## ON THEIR METAL

*(Continued from page 6)*

and round billets up to six inches is accomplished by what may simply be described as a 400-ton hydraulic "one shot" press. A press of this type, operated by a 150 horsepower motor, will produce from 2,500 to 3,000 medium weight shells in 24 hours.

This shell shop has produced as many as fourteen different types, and has had eight varieties in process at one time, as well as doing special experimental work for the University of Toronto.

### Beehive of Industry

The over-all picture of the Arsenal itself, leaves one with the impression that it is a self-contained unit inasmuch as it has a very modern foundry, two rolling mills with up-to-date equipment for rolling and annealing brass, and numerous presses for cupping different sizes of cartridges. The plant has also a well-equipped machine shop and tool room which takes care of mechanical requirements and provides tools for all operations. Not being close to supply houses, a large stores department is also a very necessary part of the set-up. A heating plant, blacksmith shop, underground rifle range and magazines complete this veritable "beehive" of industry.

At the present time, there are approximately 1,100 employed at this plant, of whom about 400 are women. Many have husbands, brothers, fathers, sons, daughters and sweethearts at the "front." Quite a few come from neighbouring farms, and after the day's work is done they return home to do such chores as milking cows, feeding poultry and livestock, and other essential duties.

Husband and wife and father and daughter work side

by side in the friendly atmosphere of this high-g geared war plant. Perhaps this kindred spirit is due to the fact that they are all conscious of doing their part to speed the return of the girls and boys in uniform, and Hydro is helping to keep them on their "metal."



# Lighter Lines



"Just for the gag, let's dash up and shout, 'hello papa!'"

The vicar was appealing to members of his congregation to supply refreshments for the church social.

"And now, please remember," he ended, "what we want are not abstract promises, but concrete cakes."



"I call him my Postwar Plan number one!"

The invited guest was being shown to his bed in the haunted room by his host's faithful but rather sinister-looking butler.

At the door of the room they paused.

"By the way," said the guest, "has anything—er—unusual ever happened in connection with this room?"

"Not for over fifty years, sir," said the servant hollowly.

"And what happened then?" asked the guest with a sigh of relief.

"A gentleman who spent the night here appeared at breakfast the next morning," came the reply.

\* \* \*

Daughter (leaving for holiday):  
"Good-bye, Dad. Don't forget to write, even if it's only a cheque."

\* \* \*

A youngster was about to be caned for some trivial offence. The headmaster asked him how he preferred to receive his punishment.

"Well, sir," said the boy quickly, "if you please, I'd like the Greek style of penmanship."

"What on earth do you mean?" asked the master.

"Please, sir, the upstrokes heavy and the downstrokes light," said the bright lad.

\* \* \*

A hard-driving taxi driver ignored a red signal, threatened a policeman's knees, missed the street island by a hair and grazed a bus, all in one dash.

The policeman hailed him, then strolled over to the taxi, pulling a big red handkerchief from his pocket en route. "Listen, cowboy," he growled, "on the way back I'll drop this and see if you can pick it up with your teeth."



"We're having meat tonight, Dad. Want to give me 15 cents to spoil my appetite?"

Doctor: "You have nothing to worry about; the electricity in the atmosphere affects your system. That will be two dollars, please."

Patient: "I guess you're right, Doctor; there are times when I feel over-charged."



"I can always tell better what to do, after I'm told what not to do!"



## TRANSFORMER OIL USED TWENTY YEARS

**S**ERVICEABILITY of oil used in transformers and oil circuit breakers is determined by means of a dielectric strength test.

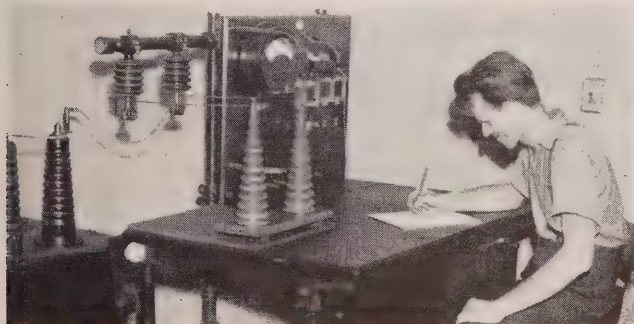
In the H.E.P.C. laboratory, this test is performed in a manner similar to that specified by the American Society for Testing Materials.

A sample of the oil is taken from a transformer or oil circuit breaker and placed in a special cup in which are two flat circular disks, one inch in diameter and spaced one-tenth of an inch apart. When the oil is poured into the cup it fills the space between these disks. Voltage between the two disks is increased until it punctures this one-tenth inch layer of oil. The value of voltage necessary to puncture this oil is known as the dielectric strength of the oil. New clean oils may have a dielectric strength as high as 40 kv. but values above 22 kv. are considered acceptable. Usually five puncture or breakdown tests are made on each sample and the average is taken as the dielectric strength.

Oil deterioration, which lowers the dielectric strength, may be due to a number of causes, including the following:

- (1) Water which may enter in various ways despite very careful handling and operation.
- (2) Oxidation due to exposure to air and heat, causing sludge formation, and the gradual formation of organic acids.
- (3) Carbonization in oil circuit breakers due to arcing.
- (4) Contact with improperly dried or incorrect type of insulating varnish.

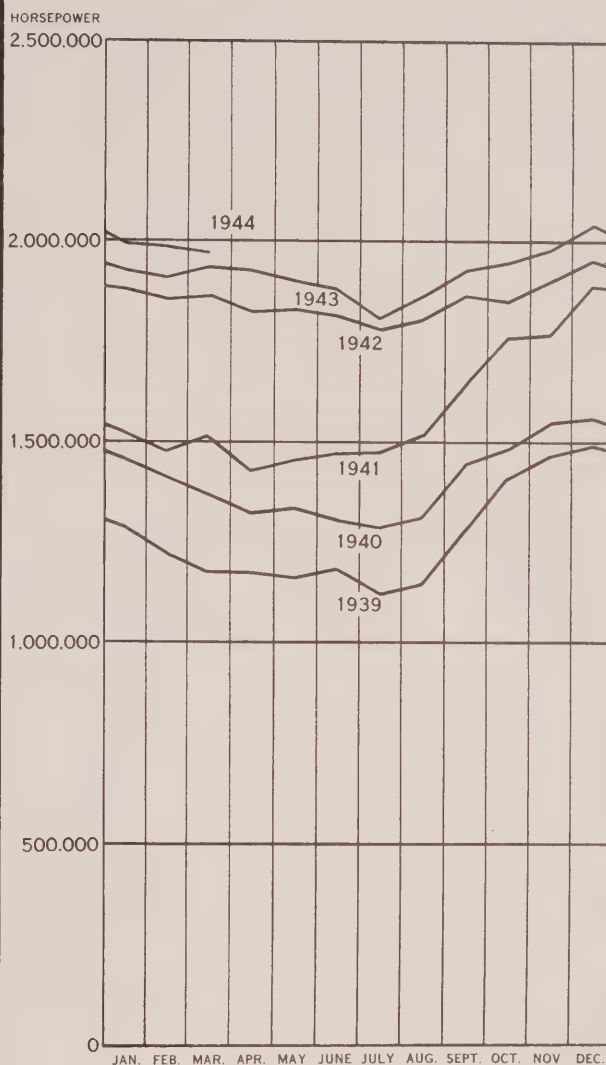
Although there are various factors at work to cause deterioration of oil, by means of a systematic testing procedure, a continuous research programme, and a highly developed process of reclamation, oil may be maintained in service, in some instances for more than twenty years.



LEN COOK conducts a test on the dielectric strength of transformer oil in the H.E.P.C. laboratory at Strachan Avenue.

### SOUTHERN ONTARIO SYSTEM EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

#### PRIMARY LOAD



#### PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	MARCH, 1944	MARCH, 1943	
SOUTHERN ONTARIO SYSTEM	1,970,407	1,937,418	+ 1.7
THUNDER BAY SYSTEM	100,134	100,496	- 0.4
NORTHERN ONTARIO PROPERTIES	208,219	213,032	- 2.3
TOTAL	2,278,760	2,250,946	+ 1.2

#### PRIMARY AND SECONDARY LOADS

SOUTHERN ONTARIO SYSTEM	2,078,503	1,997,606	+ 4.0
THUNDER BAY SYSTEM	110,255	125,322	- 12.0
NORTHERN ONTARIO PROPERTIES	256,008	237,831	+ 7.6
TOTAL	2,444,766	2,360,759	+ 3.6

# MUNICIPAL LOADS, FEBRUARY, 1944

## SOUTHERN ONTARIO SYSTEM

### NIAGARA DIVISION

(25-Cycle)

	H.P.	Popula- tion
Acton	1,697	1,903
Agincourt	189	P.V.
Ailsa Craig	117	487
Alvinston	112	649
Amherstburg	883	2,704
Ancaster Twp.	359	V.A.
Arkona	51	403
Aurora	1,312	2,821
Aylmer	832	1,985
Ayr	167	760
Baden	660	P.V.
Beachville	737	P.V.
Beamsville	430	1,227
Belle River	172	836
Blenheim	560	1,873
Blyth	104	662
Bolton	235	629
Bothwell	124	683
Brampton	2,479	6,157
Brantford	23,633	31,622
Brantford Twp.	1,150	V.A.
Bridgeport	120	P.V.
Brigden	85	P.V.
Bronte	140	P.V.
Brussels	133	784
Burford	193	P.V.
Burgessville	38	P.V.
Burlington	1,475	3,925
Burlington Beach	351	1,474
Caledonia	340	1,430
Campbellville	37	P.V.
Cayuga	125	700
Chatham	7,470	17,184
Chippawa	330	1,228
Clifford	97	491
Clinton	578	1,879
Comber	118	P.V.
Cottam	75	P.V.
Courtright	42	355
Dashwood	93	P.V.
Delaware	64	P.V.
Delhi	658	2,430
Dorchester	95	P.V.
Drayton	122	528
Dresden	460	1,525
Drumbo	83	P.V.
Dublin	51	P.V.
Dundas	3,158	5,245
Dunnville	1,313	3,916
Dutton	245	830
East York Twp.	8,896	41,578
Elmira	1,168	2,069
Elora	425	1,185
Embro	159	420

	H.P.	Popula- tion
Erieau	78	281
Erie Beach	8	21
Essex	577	1,886
Etobicoke Twp.	8,227	V.A.
Exeter	720	1,654
Fergus	1,200	2,759
Fonthill	176	860
Forest	540	1,562
Forest Hill	7,167	12,172
Galt	11,719	15,126
Georgetown	1,799	2,452
Glencoe	182	763
Goderich	1,572	4,674
Granton	63	P.V.
Grimsby	797	1,988
Guelph	11,671	23,074
Hagersville	545	1,524
Hamilton	159,054	164,719
Harriston	416	1,292
Harrow	516	1,092
Hensall	192	686
Hespeler	2,831	2,938
Highgate	102	322
Humberstone	610	2,831
Ingersoll	3,447	5,757
Jarvis	171	513
Kingsville	671	2,453
Kitchener	26,715	35,456
Lambeth	122	P.V.
LaSalle	227	907
Leamington	1,640	6,048
Listowel	1,447	2,984
London	40,636	77,105
London Twp.	602	V.A.
Long Branch	1,280	4,258
Lucan	163	643
Lynden	115	P.V.
Markham	326	1,175
Merlin	85	P.V.
Merritton	11,493	2,916
Milton	1,438	1,915
Milverton	391	994
Mimico	2,930	8,354
Mitchell	720	1,670
Moorefield	55	P.V.
Mount Brydges	97	P.V.
Newbury	32	288
New Hamburg	569	1,441
Newmarket	1,638	3,800
New Toronto	12,279	9,469
Niagara Falls	10,423	20,371
Niagara-on-the-Lake	681	1,764
North York Twp.	10,650	V.A.
Norwich	394	1,301

	H.P.	Popula- tion
Oakville	1,317	3,369
Oil Springs	181	541
Otterville	94	P.V.
Palmerston	581	1,400
Paris	1,981	4,604
Parkhill	182	1,029
Petrolia	1,010	2,768
Plattsville	147	P.V.
Point Edward	1,671	1,199
Port Colborne	2,257	6,928
Port Credit	915	1,934
Port Dalhousie	825	1,599
Port Dover	418	1,790
Port Rowan	111	700
Port Stanley	265	824
Preston	4,244	6,656
Princetown	120	P.V.
Queenston	93	P.V.
Richmond Hill	474	1,295
Ridgetown	628	1,986
Riverside	1,273	5,235
Rockwood	104	P.V.
Rodney	145	758
St. Catharines	32,762	34,541
St. Clair Beach	76	138
St. George	148	P.V.
St. Jacobs	343	P.V.
St. Marys	1,525	4,009
St. Thomas	7,945	17,045
Sarnia	10,979	18,599
Scarborough Twp.	4,573	V.A.
Seaforth	836	1,782
Simcoe	2,724	6,340
Smithville	169	P.V.
Springfield	64	382
Stamford Twp.	2,777	8,275
Stoney Creek	252	933
Stouffville	239	1,198
Stratford	6,763	17,163
Strathroy	1,468	2,834
Streetsville	198	701
Sutton	165	949
Swansea	3,152	6,907
Tavistock	616	1,080
Tecumseh	371	2,331
Thamesford	214	P.V.
Thamesville	188	816
Thedford	104	598
Thorndale	60	P.V.
Thorold	2,800	5,284
Tilbury	1,491	1,923
Tillsonburg	1,465	4,602
Toronto	360,630	657,612
Toronto Twp.	2,856	V.A.
Trafalgar Twp.	490	V.A.



# MUNICIPAL LOADS, FEBRUARY, 1944

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Wallaceburg	4,349	4,802	Neustadt	46	431	Lakefield	339	1,301
Wardsville	37	221	Orangeville	684	2,558	Lanark	82	686
Waterdown	224	867	Owen Sound	6,154	13,559	Lancaster	44	570
Waterford	497	1,294	Paisley	100	530	Lindsay	3,427	8,345
Waterloo	5,531	8,968	Penetanguishene	1,024	4,177	Madoc	184	1,130
Watford	385	1,023	Port Carling	113	520	Marmora	125	1,004
Welland	11,069	14,899	Port Elgin	399	1,415	Martintown	34	P.V.
Wellesley	85	P.V.	Port McNicoll	107	950	Maxville	98	811
West Lorne	246	768	Port Perry	222	1,175	Millbrook	88	749
Weston	4,997	6,333	Priceville	10	P.V.	Morrisburg	272	1,484
Wheatley	209	761	Ripley	115	420	Napanee	1,176	3,241
Windsor	55,484	118,040	Rosseau	24	305	Newcastle	115	701
Woodbridge	599	946	Shelburne	224	1,053	Norwood	148	710
Woodstock	8,413	12,339	Southampton	539	1,467	Omeme	179	630
Wyoming	75	538	Stayner	253	1,106	Orono	95	P.V.
York Twp.	20,851	77,175	Sunderland	72	P.V.	Oshawa	18,237	26,610
Zurich	105	P.V.	Tara	85	510	Ottawa	37,805	150,861

## GEORGIAN BAY DIVISION (60-Cycle)

Alliston	358	1,700
Arthur	152	1,089
Bala	103	355
Barrie	3,844	355
Beaverton	181	941
Beeton	143	617
Bradford	163	1,041
Brechen	47	P.V.

Cannington	157	761
Chatsworth	71	333
Chesley	489	1,812
Coldwater	161	545
Collingwood	2,475	6,249
Cookstown	73	P.V.
Creemore	128	661

Dundalk	207	686
Durham	338	1,874

Elmvale	145	P.V.
Elmwood	55	P.V.

Flesherton	68	452
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Grand Valley	120	645
Gravenhurst	1,138	2,261

Hanover	1,293	3,190
Holstein	18	P.V.
Huntsville	1,123	2,943

Kincardine	668	2,483
Kirkfield	25	P.V.

Lucknow	402	856
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Markdale	162	776
Meaford	700	2,759
Midland	4,080	6,764
Mildmay	127	764
Mount Forest	441	1,936

## EASTERN ONTARIO DIVISION (60-Cycle)

Alexandria	185	1,976
Apple Hill	49	P.V.
Arnprior	1,217	4,019
Athens	96	626

Bath	36	325
Belleville	7,323	15,498
Bloomfield	91	636
Bowmanville	2,991	3,850
Brighton	425	1,462
Brockville	4,417	11,112

Cardinal	221	1,602
Carleton Place	1,755	4,143
Chesterville	255	1,094
Cobden	103	643
Cobourg	2,135	5,907
Colborne	230	960

Deseronto	196	1,002
Finch	87	396
Frankford	135	1,095

Hastings	107	823
Havelock	129	1,103

Iroquois	207	1,123
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Kemptville	327	1,230
Kingston	14,873	29,545

Lakefield	339	1,301
Lanark	82	686
Lancaster	44	570
Lindsay	3,427	8,345

Madoc	184	1,130
Marmora	125	1,004
Martintown	34	P.V.
Maxville	98	811
Millbrook	88	749
Morrisburg	272	1,484

Napanee	1,176	3,241
Newcastle	115	701
Norwood	148	710

Omeme	179	630
Orono	95	P.V.
Oshawa	18,237	26,610
Ottawa	37,805	150,861

Perth	1,620	4,197
Peterborough	12,112	24,977
Pictou	1,121	3,400
Port Hope	2,406	4,997
Prescott	1,382	3,318

Richmond	63	428
Russell	71	P.V.

Smiths Falls	2,862	7,741
Stirling	257	947

Trenton	4,841	8,183
Tweed	197	1,181

Warkworth	66	P.V.
Wellington	194	948
Westport	86	725
Whitby	1,310	4,236
Williamsburg	77	P.V.
Winchester	346	1,017

## THUNDER BAY SYSTEM (60-Cycle)

Fort William	15,915	30,370
Nipigon Twp.	225	V.A.
Port Arthur	21,450	24,217

## NORTHERN ONTARIO PROPERTIES

### Nipissing District (60-Cycle)

North Bay	4,814	16,013
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### Patricia District (60-Cycle)

Sioux Lookout	299	1,967
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### Sudbury District (60-Cycle)

Capreol	239	1,660
Sudbury	8,796	35,812



**"I'M MOVING  
UP FRONT NOW**

***...Are you with me?"***

● "The going's getting tougher. It's raining again. The mud is like gumbo. Over on the other side of the hill, the enemy is shelling us. In a few hours we attack. I've got to go on, now. My job's up ahead."

Your job lies ahead too, just as clearly defined as this Canadian soldier's at the battlefield. Are you backing him . . . to the limit? You're not giving up anything when you buy Victory Bonds. All you are asked to do is *lend*, not give; *invest* not *donate*! Surely the buying of extra Bonds is no hardship compared to the sacrifice of the lad who is "moving up front" today.

**PUT VICTORY FIRST**  
*Buy...and Keep your*  
**VICTORY BONDS**



**THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO**



# HYDRO! News



5 1944  
Y. OF TORONTO

*Garsh*  
Ottawa.

THE KING

# On Guard

## 24 HOURS A DAY



## HYDRO SERVICE

### *Carries On!*

"Neither snow nor rain nor heat nor night stays these couriers from the swift completion of their appointed rounds."

*Herodotus.*

● When there's a storm, most people seek shelter, but that is when Hydro is busiest. Between darkness and dawn come hours of rest and sleep, but, with Hydro, every hour begins a new day.

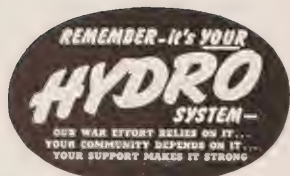
Light for homes, hospitals and factories—heat for blast furnaces—or to cook meals in your home—energy to turn thousands of motors in factories, mines, shipyards—this is the work of your Hydro.

Hydro is helping to shorten the war. Over 1,000,000 Hydro-electric horsepower is at work on war materials.

Let us all be thrifty in our use of Hydro. New war plants must be energized and existing plants are constantly being harnessed to the war effort. Let war needs come first.

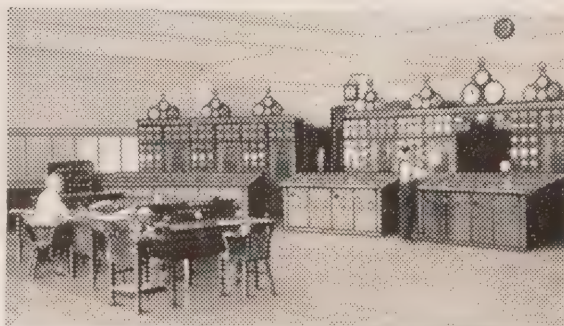
#### AN APPEAL TO THE HOUSEWIFE

You can do so much to save electricity. Don't let the kettle over-boil. Watch the switches on your electric range—turn out all lights when not needed. Resolve to save some current every day to help Ontario's war industries.



#### PICTURE AT RIGHT SHOWS A HYDRO CONTROL ROOM

Where the doors never close. Every hour of the day and night, every day in the year, watchful attendants are on the alert studying meters, keeping records and regulating the flow of Hydro current to consuming areas.



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO





## THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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### The Front Cover



REPRODUCED on the front cover is an interesting Karsh study of King George VI, whose 49th birthday is observed this month. His Majesty was born on December 14, 1895, but the event is "officially" observed in June. It is an occasion which will again remind Canadians of the historic visit of the King and his gracious Queen to this Dominion in 1939.

Volume 31

June 1944

Number 6

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ADAM

BECK

QUEENSTON-CHIPPAWA



## ONTARIO'S GREATEST SON

**A**LTHOUGH it is nearly twenty years since Sir Adam Beck passed away, he will be remembered for all time as "The Father of Hydro."

Today, Hydro occupies a pre-eminent position in the economic life of Ontario. The many benefits of power at cost have been extended to people in cities, towns, villages and on farms.

Thus, the name of Hydro in itself is the most enduring memorial to his fighting crusade for public ownership of the power resources of this province.

Time has shown, however, that Sir Adam rendered more than a great public service to the people of Ontario. In Hydro he created a driving force which has proved to be one of the most vital factors in Canada's widely acclaimed war production programme. "The Father of Hydro," therefore, rendered an invaluable service to Canada, the Empire and all the United Nations which are now on the march.

In this issue, Hydro News features an article which is dedicated to the memory of the man who was hailed as "Ontario's Greatest Son," and who was born 87 years ago on the 20th of this month. It is an article which covers more than recognized and generally known biographical facts about Sir Adam. In it are recorded a number of incidents and sidelights which give an enlightening impression of the more intimate and human traits of a man who commanded the respect and admiration of friend and foe alike.

## TIME TO "DIG IN"

**I**N back gardens, on unused suburban land and on city plots, victory gardeners are now getting in the kind of spade work which will produce much-needed vegetables and fruits for Canadian homes.

Many of these gardeners might be described as "veterans at the game." Others have now one or two years' experience behind them. The newcomers, who have still to acquire a smooth-working technique, may be applying salve to skinned hands and liniment to stiff joints.

Even if this spade work has to be backed up by a little salve and liniment, the results are well worth the effort.

The men and women who are really doing a "down to earth job" in their victory gardens, can take pride in having grown produce for the use of their own families. At the same time, they have the added satisfaction of knowing that they have made a worthwhile contribution to Canada's war effort.

Last year, Hydro victory gardeners produced an average of \$65 worth of vegetables.

This year calls for still greater effort as the shortage of fresh and processed vegetables will be more acute for two reasons. In the first place, there is a greater shortage of experienced farm help and, secondly, a larger percentage of commercial production must be processed to meet the needs of occupied countries.

All who are in a position to get behind this year's victory garden campaign, should get busy without delay and "dig in."


## A VITAL SERVICE

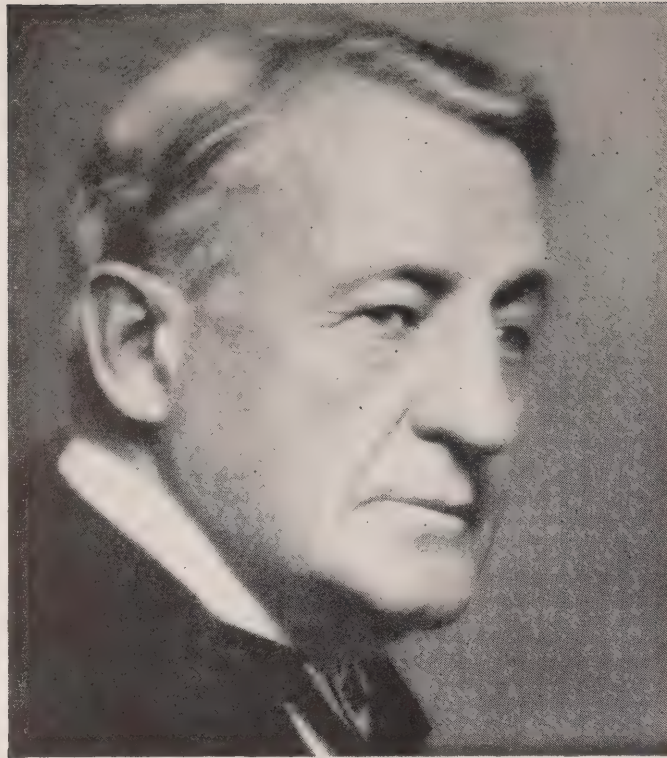
**W**ARTIME necessity has provided a compelling impetus to spur man on to new and amazing achievements in many fields of endeavour. While many of these achievements must remain on the secret list for the duration, information now available reveals the increasingly important role which science will be called upon to play in the post-war era.

An illustration of this fact is to be found in the ever-widening scope of the service which is being rendered by the men and women who are engaged in the field of meteorology. Advance information on weather conditions is not only essential in planning naval, military and air campaigns, but it is an important factor in the daily operations of many industries.

At the same time, it has now been established that weather forecasting is a service which can be used to advantage in the public utility field.

Many interesting facts bearing on this subject of meteorology are to be found in the article, "Rain or Shine?" published in this issue of Hydro News.

 A PROMINENT Toronto landmark on University Avenue, immediately south of Queen Street, is this memorial to the late Sir Adam Beck shown on the opposite page. It was erected in 1934 "In grateful commemoration of the public service of 'Ontario's Greatest Son,' whose labours have ensured that the citizens of his native province under co-operative municipal ownership shall enjoy the benefits of low cost electrical energy. . . ."



66

# FATHER OF HYDRO

**J**T would appear that "Greek met Greek" in London, Ontario, in the year 1902 when Winston Churchill, while on a lecture tour of Canada, stayed for one night at the home of the late Sir Adam Beck.

This conclusion may be drawn from the fact that the experience prompted Sir Adam to make the blunt remark: "I began to wonder who the hell owned the house!"

The meeting of these two dynamic personalities and Sir Adam's comment assume a more interesting significance now than they did at the actual time.

Today the unique achievements of the two men and the great public service they have rendered stand out clearly against a wartime background.

The memory of Sir Adam's colourful career, during which he fought for the principle of public ownership, is perpetuated by the name "Hydro" and all it means to the people of Ontario. Today, Churchill is Britain's warrior Prime Minister, the man who "took over" in the Empire's "darkest hour" to rally the people with a promise of only "blood, sweat, toil and tears."

Thus, the names of both men will be chronicled in history as "fighting leaders." History will also record that they had other qualities and traits of character in common. Churchill, for example, found bricklaying a form of enjoyable relaxation before the war.

Sir Adam, too, liked to do things with his hands. Many of these "things" he did at the Queen Alexandra Sanatorium

which he and Lady Beck founded at London, Ontario. Following breakfast on a Sunday morning, he would often journey to this institution and make his way to the basement where he would peel off his coat and go to work in the boiler room. One particular Sunday when he was accompanied by E. V. Buchanan, manager of the London Public Utilities Commission, Sir Adam discovered something wrong with a pump.

He grunted impatiently, glared accusingly at his companion and then exclaimed, "You are a hell of a mechanic Buchanan!"

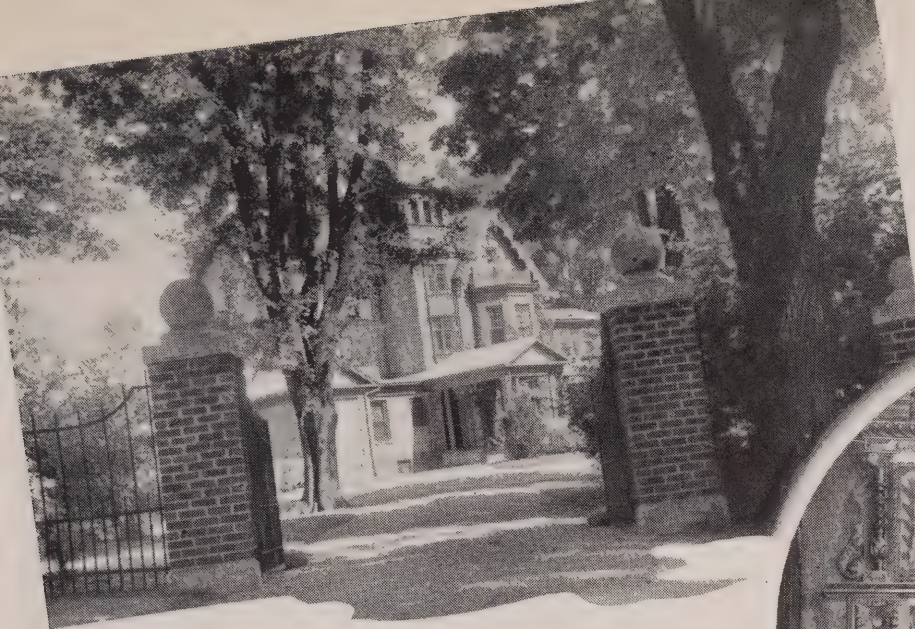
"I'm not a mechanic, Sir Adam," replied Buchanan, "I'm an engineer!"

This amusing incident and his comment on Winston Churchill are but two of many interesting and intimate sidelights which serve to accentuate the colourful and rugged qualities of a fighter who disliked "kid gloves" and who frequently departed from the conventional and orthodox approach when "under fire."

Few men perhaps have had a better opportunity of getting to know Sir Adam "the man" than Mr. Buchanan who, by reason of his work and the fact that he resided "just across the road," was in frequent contact with the "Father of Hydro."

When chatting to Hydro News, Mr. Buchanan was reluctant to talk about himself or his own role in the Hydro organization. This much could be learned, however. After





FRAMED BETWEEN the high pillars at the entrance and tall, stately trees, is the home (left) which was occupied by the late Sir Adam Beck, at London, Ont.

A SECTION of the fine library in the Sir Adam Beck home is shown in the lower illustration.



THOSE WHO are familiar with London and its environs will be able to pick out the Queen Alexandra Sanatorium in the illustration on the left. One of the finest institutions of its kind in Canada, it was founded by Sir Adam.



graduating as an electrical engineer, he left his native Scotland as a young man and came to Canada in the year 1910. It was not long before he became identified with Hydro which, at that time, had office space in the Confederation Life Building in Toronto. In the same year he was sent to London as resident engineer and, four years later he became manager of the London Public Utilities Commission—the position which he still occupies.

While he doesn't care to say much about himself, Mr. Buchanan believes that the history of Hydro and the life story of the man who fought to make Hydro a reality should be told and retold at every opportunity.

"Hydro," he declared, "is one of the great and enduring heritages of the people of this province. It has completely revolutionized our whole industrial and domestic way of life. From cities and towns it has reached out to bring the many benefits of power at cost to the remote rural areas of the province. The story of Hydro's magnificent and far-reaching contribution to Canada's war effort will go down in history as one of the great achievements on the

home front. It is only fitting that the man who made all this possible should be remembered by the people of Ontario."

This article, therefore, is dedicated to the memory of "The Father of Hydro," who was born 87 years ago on the 20th of this month at the village of Baden which was founded by his father.

The boy who was destined to be acclaimed as "Ontario's greatest son," was the fourth child of Jacob Beck and Charlotte Hespeler, pioneers of old Waterloo county.

He was educated in the local school at Baden, at Dr. Tassie's school in Galt and later, at Rockwood Academy and Western University.

When quite young, he joined his father in the foundry business at Baden. When the business failed in 1879, Adam came to Toronto and secured a position as a clerk at the Morrison Brass Works.

This type of work proved too humdrum, however, and one year later he started a box factory at Galt. The venture proved successful, and the business was moved to London.



In 1898, he married Miss Lillian Ottaway of Hamilton, and with the turn of the century his distinguished public career commenced with his election as mayor of London in January, 1902. In May of the same year, he was elected to represent his adopted city in the provincial legislature. The following month of June found him taking an active part in a conference of manufacturers in Kitchener, then Berlin, called to discuss the possibilities of bringing cheap electric power from Niagara Falls to the manufacturing centres of the province. Many regarded this conference as the real beginning of Hydro.

During the twelve years he fought to make Hydro a reality, Sir Adam refused to accept a cent of salary.

In the year 1909 he and his wife were presented at court, and in 1914 he was knighted.

Recognized as one of the best judges of horses in Canada, Sir Adam rendered an important service in the last war when he purchased thousands of horses for the Canadian Expeditionary Force in France. Records show that he bought good horses at prices which were fair to the vendors and to the Government of Canada. The substantial cheques

which he received for his services as Remount Commissioner, he returned to Ottawa uncashed.

These facts about Sir Adam Beck are more or less generally known. There are, however, the personal or more intimate facts which are usually known only to a man's close associates.

As already stated, Mr. Buchanan had the opportunity of getting to know Sir Adam on a "man to man" basis, and thus learned many of these intimate "sidelights."

When interviewed by Hydro News, the manager of the London Public Utilities Commission recalled many interesting incidents and facts associated with the life of "The Father of Hydro."

These facts clearly show that Sir Adam was not only a fearless and relentless fighter for what he believed to be in the interests of the people as a whole, but he was a man who abhorred obscenity, dishonesty or subterfuge. At the same time, he could more than hold his own when he felt a point could be more eloquently expressed by the additional emphasis of the words "damn" and "hell."

*(Continued on page 20)*



IN THE office of E. V. Buchanan, general manager of the London Public Utilities Commission, hangs the original photograph from which the above reproduction was made. It was taken at the opening of the utilities' office building by Sir William Hearst, then Prime Minister of Ontario, on July 10, 1918. Sir Adam Beck is shown in the right foreground, while others in the picture are: Sir William Hearst; C. R. Sommerville, then mayor of London; D. M. McFarland, who was a commissioner for 28 years; Sir Phillip Pocock, then chairman of the commission; Jared Vining, a member of the commission; and J. W. Lyons of Guelph, a former president of the O.M.E.A.



# CANADA'S LONDON



ERECTED ABOUT a hundred years ago, the building shown above is the Court-house at London. It is a replica of Col. Thomas Talbot's ancestral home in Ireland. At the left is an illustration of the London municipal building in which are the offices of the public utilities commission.

**S**T. PAULS, Picadilly, Covent Garden Market, Waterloo, names which are immediately associated with the bomb-blitzed heart of the Empire, are also to be found in Canada's London.

In this great Western Ontario metropolis, located in Middlesex county in the beautiful valley of the Thames, the visitor discovers much of the English beauty of landscape and a progressive spirit which is ruggedly Canadian in its character.

There is an interesting story about Canada's London, which flourishes in the heart of one of the richest agricultural regions in Canada. It was in 1792 when Colonel John Graves Simcoe thought the site should become the

capital of Upper Canada. This idea, however, did not materialize and no building was erected there until 1826.

Early in its history, the area, now known as London, became a trading and industrial centre. Over the past century, it continued to prosper and, today, it is recognized as one of the most typical of Canadian cities, and is the commercial, industrial and financial capital of Western Ontario.

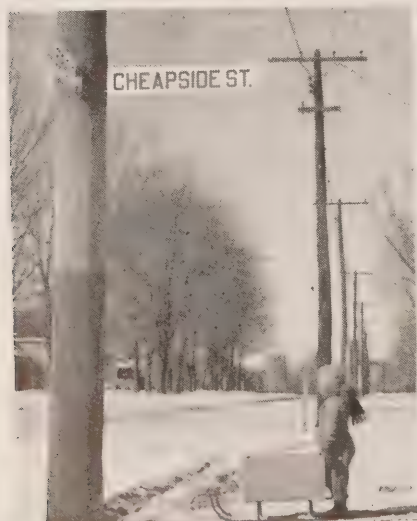
London has another distinction—it was the home of the late Sir Adam Beck, "Father of Hydro" who, from 1902 to 1904, was mayor of this city, which was one of the first municipalities to join the great Hydro family.

*(Continued on page 10)*





LONDON, ONTARIO, has a great deal in common with London, England, when it comes to the names of streets, surrounding areas and certain landmarks. Top left shows the war memorial which is a small replica of the cenotaph in the English capital. Other examples illustrated on this page are Covent Garden Market, Picadilly Street, Cheapside Street, Pall Mall Street and Kensington Bridge.



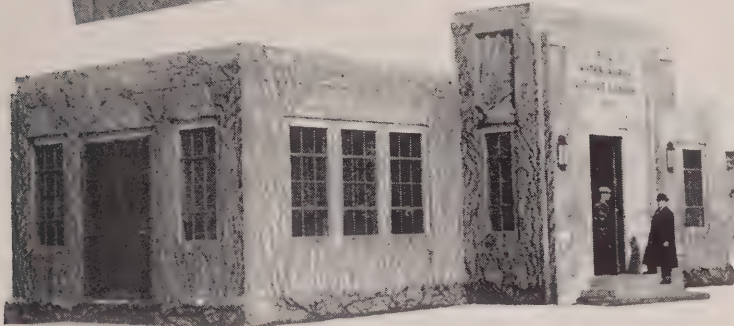




MEET FRANK Wilkinson, manager of the Hydro Shop at London. He started with the local commission in 1919.



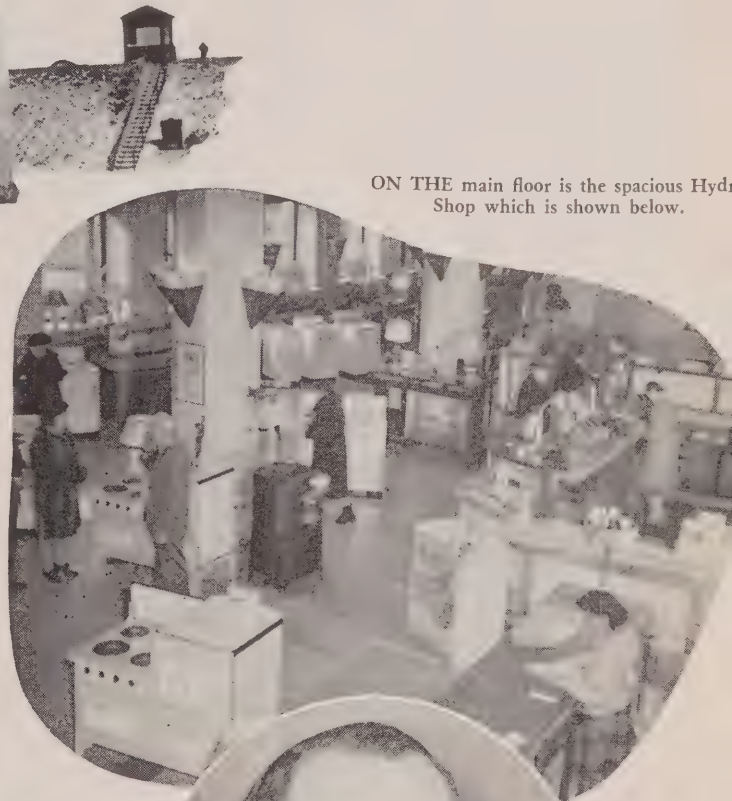
METER TESTING, motor repair, garage, storage and other facilities are to be found in these local commission buildings at Ridout and Horton streets where one of London's original substations was erected.



THIS ILLUSTRATION shows London's modern filtration plant.



THIS REPRODUCTION shows a section of the utilities' office at London.



ON THE main floor is the spacious Hydro Shop which is shown below.



ONE OF London's modern substations is shown in this reproduction.



VERNON A. McKILLOP (above) is assistant manager and engineer at London.



(Continued from page 7)

Here too, was established the first Hydro shop, inaugurating a wiring department to assist consumers, and pioneering the sale of irons, toasters and appliances. The first electric stove, and later a seamless oven, it is claimed, were developed in London.

### Inaugurated Hydro in 1909

Hydro, operated by the Board of Water Commissioners, had its introduction in London in 1909. The name was changed in 1914 to the Public Utilities Commission which took over the operation of the electrical, waterworks, parks and playground departments. In 1936 the utilities was requested to assume responsibility for the management of the London and Port Stanley Railway.

When the London Public Utilities Commission took over the operation of Hydro the total load was 3,000 horsepower. Today it is 45,000 horsepower, and serves 19,000 domestic, 1,933 commercial and 450 industrial users. The load in this community would, no doubt, have been much greater but for the splendid co-operation of the consumers in conserving energy for essential war needs. The supply of power is distributed through eleven municipal stations and one H.E.P.C. transmission station.

During the pre-war period when a surplus of power was available, London assumed the initiative in promoting the use of flat rate water heaters. Sponsored by E. V. Buchanan, the general manager of the London Public Utilities Commission, the idea was enthusiastically adopted, with the result that these heaters are now in service in approximately half the homes in that city. Records indicate that Hydro consumers in London have 10 per cent of the flat rate heaters in use throughout Ontario.

The enviable financial position of the London commission reflects consistent adherence to sound principles which has characterized the development of the municipality since its inception. All outstanding debentures have been paid and there is a credit balance of \$94,000, as well as the sum of \$750,000 invested in Victory Bonds.

Since the official inauguration of Hydro in London, there has been a marked reduction in the cost of service to consumers. In 1913, with an average domestic monthly consumption of 17 kilowatt-hours, the average cost was 4.5 cents per kilowatt-hour. Today, the average monthly consumption of domestic consumers is 245 kilowatt-hours, and the average net cost per kilowatt-hour is 1.03 cents.

### Meeting Many War Demands

With characteristic thoroughness, London has geared itself for the demands of war and approximately 50 per cent of its population of 81,000 is engaged in war work. With the help of Hydro, which is the vital nerve centre of industry, they are making arms and munitions, naval supplies, air force targets, airplane jigs, pumps, tire repair machines, shell boxes, army, navy and air force boots, coats, ship and airplane doors, army sun helmets, transport equipment, leather, winches, boilers, furnace shells, chemicals, acids, lacquer containers, powdered and evaporated milk, dried eggs, food stuffs, electric light bulbs, radio

and electrical instruments, time fuses, air compressors and machine tools.

London is also a centre of culture, being the home of the famous University of Western Ontario, whose colours are familiar to gridiron fans. At the same time, it is known for its excellent system of primary and secondary schools.

A city of many fine buildings, churches and parks, London claims the distinction of having the first municipally-owned and operated golf course in Canada, which was started in 1924 through the initiative of the utilities commission. At the present time this course is being utilized by the Dominion Government.

Embracing an area of 14½ acres, Victoria Park, which was opened by Lord Dufferin in 1874, is one of London's prominent landmarks. From 1839 to 1869 it was the site of the barracks of the British Imperial Regiments stationed in London.

Springbank Park, comprising 330 acres, is one of the finest natural parks in Canada, and was developed by the local commission after securing the land for waterworks purposes.

Labatt Memorial Park, with a stadium which can accommodate 3,000 people, is also administered by the commission, and is claimed to be the first flood-lighted baseball diamond in Canada.

### Noted Historical Landmark

Still another historical landmark is the Middlesex County courthouse, whose architectural design is said to resemble that of Malahide Castle in Ireland, ancestral home of Colonel Thomas Talbot. The courthouse was built in 1831, and the jail at the rear was erected 12 years later. During the past century, numerous additions and alterations have been made in these buildings.

Thirty-five years ago this enterprising city opened the first supervised playground in Canada, and today the same park is one of a number operated by the utilities commission. Here too, lived the late Sir Frederick G. Banting, discoverer of insulin; Doctor Leonard G. Rountree, Director of the Medical Selective Service Bureau of the United States; Sir Charles Saunders, famed for the discovery of Marquis wheat; Paul Peel, the artist, who lived and did much of his painting here; and many other noteworthy people.

This flourishing centre boasts many diversified industries and it has the largest tannery in the British Empire—C. S. Hyman Company. Through a combination of several pioneer oil ventures the Imperial Oil Company had its inception in this municipality; later the refinery was moved to Sarnia. Other large companies located there include: Central Aircraft, General Steel Wares, McCormick's Limited, Empire Brass Manufacturing Company, Kelvinator of Canada, Kellogg Company of Canada, Labatt's Brewery, several hosiery firms and many others.

Hydro, the great driving force behind this progressive city of more than 230 varied industries is administered by a progressive commission comprising J. B. Hay, chairman; J. C. Doidge, A. G. Calder, W. J. Stevenson, M.D.; and mayor W. J. Heaman. The public utilities has a staff of 300 employees headed by E. V. Buchanan, general manager; V. A. McKillop, engineer; and J. E. Richards, secretary.



# RAIN OR Shine ?



FORECASTERS STUDY weather maps made from data sent in from the various stations in order to make a prediction for the ensuing 6, 12, or 24-hour period.

**By A. E. DAVISON,  
Transmission Engineer, H.E.P.C.**

ON many occasions, the weatherman has been regarded as a heartless demagogue whose greatest joy in life is to ruin Sunday School picnics and frustrate the carefully-laid plans of sportsmen and holiday-makers.

Actually, he is a very human and highly skilled fellow whose job has assumed a vital significance in the present war.

Before any military, naval or air operations can be undertaken, the weatherman must be consulted and, on his report, may hinge the entire outcome of a campaign.

In the field of military operations, so detailed are the forecasts that, it is reported, in the invasion of Sicily, even the height of the waves landing barges would encounter was forecast.

Weather forecasts are also closely linked with the operations of Hydro and other public utilities, as well as industries and transportation facilities.

While, at the present time, the exigencies of war, lack of trained personnel, and funds, curtail, to some extent, the scope of the service which might otherwise be rendered these important sections of the community, it is expected that following the war, each may be given forecast services suited to its own peculiar needs.

With the cessation of hostilities a large number of trained meteorologists will be released and, it is expected, will seek employment in this increasingly important field affecting our day to day living.

Some idea of the diversity of uses to which weather forecasts are put may be obtained from several examples of routine services extended by the Meteorological Branch of the Department of Transport.

*(Continued on page 14)*

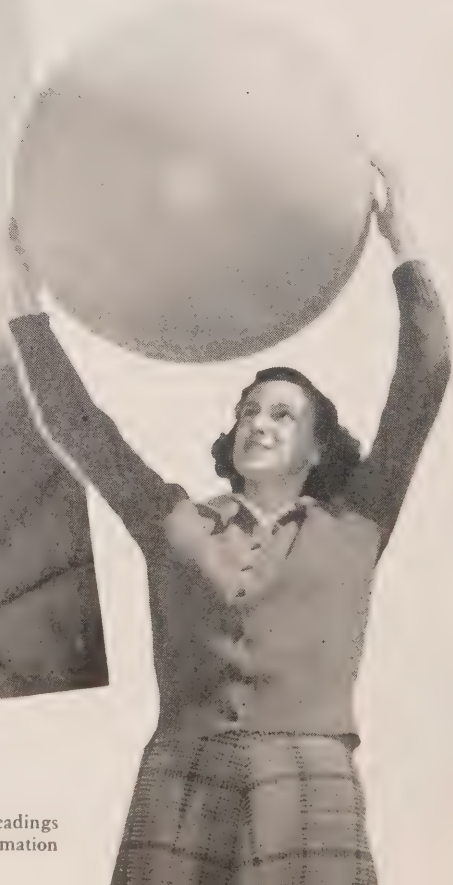


RADIO SIGNALS sent out from the apparatus attached to the balloon is received on the radio on the right and recorded on a graph by the machine on the left.



RADIOSONDE EQUIPMENT, designed in the head office of the Meteorological Service of Canada, is sent up by means of this large balloon and, from the signals sent out by the apparatus, information on the temperature, humidity, and pressure in the upper air is made available to the forecasters.

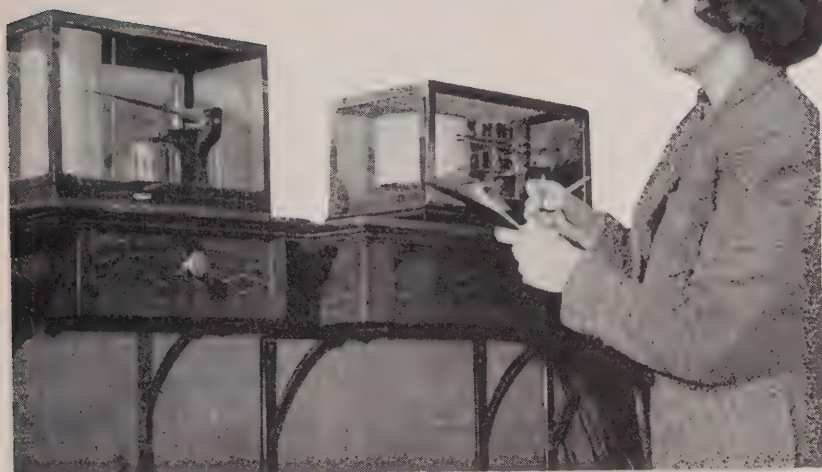
A PILOT balloon is held by one of the meteorological assistants. After this hydrogen-filled balloon is released its ascent is followed through an instrument known as a theodolite.



BY FOLLOWING the pilot balloon through this instrument and taking readings at one minute intervals its course can be plotted and from this data, information on upper air currents is obtained.



THIS YOUNG lady is taking a reading from the barograph on the left and the anemograph on the right.



DR. JOHN PATTERSON, O.B.E., controller, Meteorological Service of Canada, is shown at his desk at the Bloor Street office in Toronto.

IN THIS OFFICE climatological data is summarized from the records and prepared for release to the public and industry.

THIS YOUNG lady is taking a maximum and minimum temperature and humidity reading from these accurate instruments in specially constructed screens which allow free circulation of air but which prevent direct heat radiation from affecting the instruments.



INTO THIS OFFICE pours a flood of weather information from all over the country.



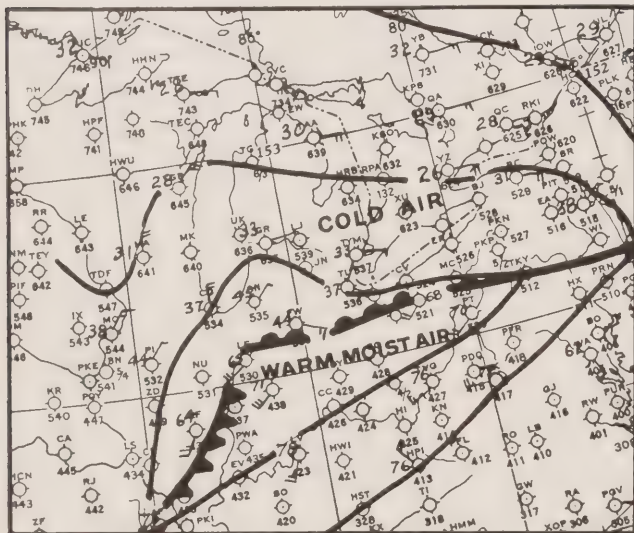
(Continued from page 11)

A certain western power company is given daily forecasts of minimum temperature conditions to be anticipated at their highest reservoir. Should zero temperatures be predicted they are able to release a supply of water into their lower reservoir, maintaining constant flow. It was found that sub-zero temperatures at the upper reservoir sometimes caused ice jams, cutting down the available water supply.

## "Freezing Out" Process

This company, like the H.E.P.C., receives a cloud density forecast for the following day so that a peak load condition, which arises on cloudy days, may be taken care of. In the case of the western company, a forecast warning of cloudy weather gives them sufficient time to place an auxiliary steam plant in operation.

We have been advised that in order to combat Italian beetles by a "freezing out" process, certain flour mills in the west are given forecasts of sub-zero temperatures. Three days of cold weather are required to destroy the beetles. It takes about a day to finish milling what is already in the mill, as well as to drain the water systems. After this has been completed the doors and windows of the mill are thrown open to complete the job.



THIS IS a section of a weather map as it appeared during a sleet storm in the Toronto area. Note the contrast in temperatures and opposing winds north and south of the round-toothed line called a "front." The warm moist air sliding up and over the cold dry air is causing a freezing precipitation, "sleet."

Thunder storms are forecast to a western Canada munition plant as certain sections of the plant must be shut down just prior to and during a thunder storm.

Weather forecasting is a highly specialized pursuit. It necessitates the gathering of continuous observations taken four times every 24 hours, over a large area.

This information pours into all the interconnected meteorological offices over tickers, teletype, and telephone.

At the point of origin it may be broadcast over short-wave radio to places where the overland wires reach and from there to all the interconnected meteorological stations on the entire continent.



THIS METEOROLOGICAL assistant is showing how she would measure the thickness of glaze which forms on this glaze rack.

From this information, barometric pressure, temperature, dew point, wind direction and velocity, cloud formations, precipitation, and upper air information, including temperature and humidity, as well as wind direction and velocity at various altitudes, the forecaster makes his prediction.

His method, briefly, is to co-ordinate all this information on a map and upper air charts, by comparison with the previous six-hourly map, the movements of various air masses and high and low pressure areas, and using his working tools, which are such meteorological elements as dew points, temperature readings, barometric pressures, coupled with the peculiar idiosyncrasies of the individual district for which he is forecasting, including variations and effects of terrain, he may predict the weather conditions for the following 6, 12, or 24-hour period.

## Offers Wide Field

The operation of public utilities, such as Hydro, offers a wide field for meteorological forecasts. Their operations can, to some extent, be improved, if accurate long and short term forecasts are available to utility management. Valuable equipment and plant can be better guarded against the onslaught of sleet and electrical storms if reliable information can be broadcast to operators in advance of the storms.

Sleet, or glaze storms, have in the past, created the greatest insecurity and caused the longest interruptions to service and the most physical damage to electric power properties.

If these forecasts, covering an area, are not available, then the electrical supply utilities, left to their own resources, find it very difficult to discover exactly what is



going on at the centre of say a 50-mile, and in some cases, a 275-mile length of line between terminals. The terminals may both be outside the sleet area, and yet failures, because of excessive mechanical loads, can occur near the centre of the section.



THE METEOROLOGICAL assistant is about to change the card on the sunshine recorder. The sun's rays passing through the solid glass lens burn a path across the card which is marked off in hours.

Internal warming of wires is generally regarded as a defence against mechanical overloading of electrical transmission conductors by glaze. This is sometimes limited in application, since the needed power current may not be available. Heat losses, due to artificial electric loads created by routing excessive amounts of usable (commercial) power through lines within the area over which glaze storms are forecast, appear at the surface of the conductor. It is sometimes possible to set up this re-routing without great inconvenience to the stability and security of an electrical system, even if the glaze deposits are only a probability, providing always that from four to twelve hours' notice is given.

This warming up of conductors, if it can be done at all, is most effective when glaze is forming, because the formation of ice or rime on the surface of the conductors is at that time very critical. There is considerable evidence that a change of temperature of a small fraction of a degree at is most effective when glaze is forming, because the formation of glaze. Instances have been noted where a water film was found between the ice coating and the conductor. Evidently there was enough absorbed and locally reflected heat at the dull corroded surface of the conductor to account for the loosening of the ice coating from the cold conductor.

#### Information on Glaze Storms

Even if operators are unable to make the fullest use of weather forecasts, or find that it is not possible to re-

route electric loads, it still is important that, while the ice is on the conductor, forecasts of temperature and of light and heavy winds, should be available to patrol and maintenance men who have to be on the alert at all times. Advance information on glaze storms also gives an opportunity for repair crews to get material located at strategic points before icy roads make the movement of such material both hazardous and difficult.

Phenomenal motions of the conductors may be expected, and both electrical and mechanical failures are likely to occur because of the action of cross winds on the streamlined cross sections of the glaze or on the partially coated surfaces of the wires. Under certain conditions, the wind tends to lift the conductor, and under other conditions, tends to depress it, with the result that, at the middle of the span, the conductor may be found in unexpected positions.

Lightning is still the most frequent source of interruptions and failures in the electrical field. Many of the actual interruptions to service due to lightning, which affect the functions of an electrical system, are of short duration. At times, however, important apparatus, for which reserve equipment is generally available, may be put out of commission for a time.

In recent years considerable attention has been given to protection of important transmission lines and stations from lightning by the use of overhead and underground "earthed" wires. However, there is no positive security



AN IMPRESSION of the devastating damage which can be caused when Nature "cuts loose" can be formed from the above illustration.

against lightning. As a result, special operating set-ups such as the planning of alternative routes, closing of loops and other temporary operating defensive measures are adopted if and when storms and storm paths are forecast.

Up to the present, owing to the difficulty in forecasting isolated thunderstorms, it is not evident just how effective use can be made of four to twelve-hour advance

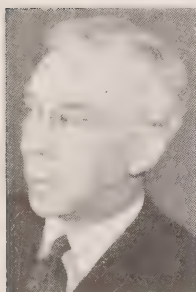
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# AROUND THE HYDRO CIRCUIT

## MANAGER AT LONDON

**EDWARD VICTOR BUCHANAN**, general manager of the London Public Utilities Commission for the past thirty years, was born in Hamilton, Scotland in 1887.

Receiving his early education at the Hamilton Academy and Allen Glen's school at Glasgow, he later graduated as an electrical engineer from the Royal Technical College, Scotland.



In 1910 Mr. Buchanan became associated with H. J. Glaubitz, who was consulting engineer to the H.E.P.C., and was sent to London on substation and pumping station construction. The following year he was transferred to the local commission as engineer, and in 1914 he was appointed general manager, which position he

has held ever since. Mr. Buchanan is also manager of the London Railway Commission.

He takes a keen interest in electrical fraternities, having been vice-president of the Engineering Institute of Canada in 1938 and '39, and a member of council of the Ontario Association of Professional Engineers in 1943.

Mr. Buchanan is credited with sponsoring the use of flat rate water heaters in Ontario.

## COMMISSIONER STEVENSON

**WILLIAM JOHN STEVENSON**, M.D., commissioner for the past two years of the London Public Utilities Commission, was born in London, Ontario.

He graduated from the University of Western Ontario in 1896, and the following year he went to Trinity College at Toronto. Later he took post-graduate courses in England, Scotland, France, Germany and the United States, and started his practice in London, Ontario, in 1900.

Dr. Stevenson was a member of the Board of Health for four years, and an alderman for five years. He was also on the Senate of the University of Western Ontario and served for some time on the staff of Victoria, St. Josephs and Ontario hospitals. He is a Fellow of the Royal Canadian Institute and a member of the British Association for the Advancement of Science.

Dr. Stevenson has a number of hobbies, one of which is zoology. He does his own taxidermy and has a collection of 2,000 stuffed birds and reptiles. He is interested in horses, both high steppers and saddle, and still rides mounts from his own stables. The doctor also raises sheep, and claims to be the first to import Shetland sheep into Canada from the Shetland Islands in 1929.

## MEET THE CHAIRMAN

**JOHN BEVAN HAY**, chairman of the London Public Utilities Commission, was born at Morpeth, Ontario, in 1884. He received his early education at the Ridgetown Public School, and later graduated from the Ridgetown Collegiate Institute. For some years past he has conducted his own business, being president of the Hay Stationery Company at London.

Mr. Hay has been a member of the London Commission since 1938, and chairman since 1939. He is also vice-president of District No. 7, Ontario Municipal Electric Association.

"Bev," as he is more familiarly known, is an active member in a number of service clubs, and is interested in all types of sports, particularly golf.



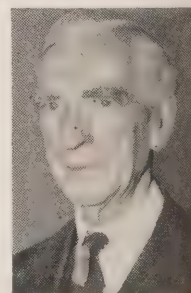
## LONDON COMMISSIONER

Although this is **ALEXANDER GOLLAN CALDER**'S first year on the London Public Utilities Commission, he has had experience in municipal affairs, having been an alderman from 1940 to 1942.

Mr. Calder is a veteran of the last war, having been a member of the 142nd battalion.

He is now an accountant and auditor, and his leisure hours are taken up with the royal and ancient game of golf, being one of the original supporters of the Thames Valley Golf course, which it is claimed, has the distinction of being the first municipally-owned and operated course in Canada.

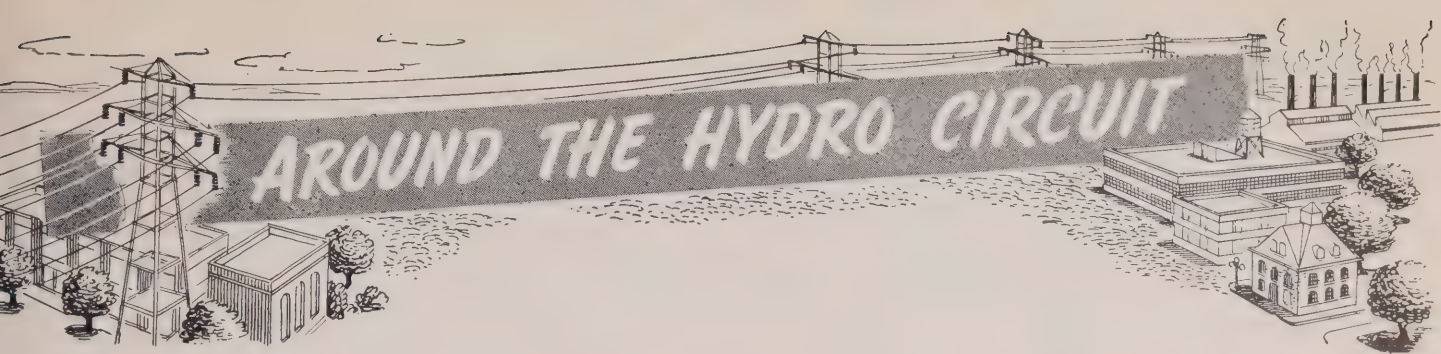
Mr. Calder is also interested in music, and plays in veterans' orchestras for canteen shows.



## JOSEPH HEENAN DIES SUDDENLY

**JOSEPH HEENAN**, formerly of the H.E.P.C. accounting department, accounts payable section, died recently in his 58th year, following a brief illness. Mr. Heenan joined the Commission's staff in June, 1915. He is survived by four sisters and a brother.





## ON LONDON COMMISSION

**JOHN CHARLES DOIDGE** has been a member of the London Public Utilities Commission for the past eighteen years, and during that time was chairman for six years. He has also been on the London Railway Commission for seven years.

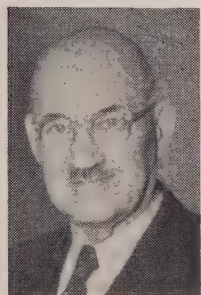


Born and educated in London, Mr. Doidge is now in the manufacturing business and has obtained several patents on concrete machinery.

He is an active worker in municipal affairs, and is past president of the Ontario Commercial Travellers Association, as well as being interested in other organizations.

## MAYOR OF LONDON

**Lt.-Col. WILLIAM J. HEAMAN**, mayor, is serving his fourth year on the London Public Utilities Commission. Previous to that he was on the council for four years and also on the Suburban Roads Commission. He was elected mayor in 1941, and has acted as an ex officio member of the commission since that time.



Born and educated in London, Lt.-Col. Heaman went overseas in the first world war with the Huron Regiment, 161st battalion.

He is now in the insurance business, and is an active member of the Tweedsmuir Branch of the Legion.

## REPORTED MISSING

**ALLAN J. LENNOX**, ordinary telegraphist on H.M.C.S. Valleyfield, which was recently torpedoed and sunk, is reported missing. Lennox was formerly on the staff of the H.E.P.C. operating department, having been an operator in training at Cameron Falls generating station from July, 1940, until his enlistment in January, 1943.

## FORT WILLIAM MANAGER PASSES

**CHARLES J. MOORS**, manager of the Fort William Hydro-Electric Commission, aged 63 years, died recently following a brief illness.

Born and educated in St. Catharines, Ontario, Mr. Moors went to Fort William in 1907 as superintendent of the electric light department. In 1911 he was appointed superintendent of the telephone department, and eleven years later the street railways were placed under his direction.

When the Fort William Hydro-Electric Commission was formed in 1926, Mr. Moors became manager, and continued as head of the combined posts until 1940. At that time he gave up the managership of the telephone and street railway companies, which are operated by the city council.

Up until a short time ago, Mr. Moors was an active member of many service clubs and other organizations.

He is survived by his widow; two daughters, Barbara and June; and a son, Charles of the R.C.A.F.



## PICTON CHAIRMAN DIES

**EVERETT P. COX**, chairman of the Picton Public Utilities Commission, died recently at his home in Picton following a heart attack.

Mr. Cox was born at Foxboro, in Hastings County, came to Prince Edward County with his parents as a child, and for the past 23 years has resided in Picton. He served the community for eleven years as county road superintendent. In 1932 he was elected to the town council and received an acclamation as mayor in 1933 and 1934. He became chairman of the public utilities commission in 1941, and held that position until he died.

Mr. Cox is survived by his widow, the former Kate Spencer.



# POST-WAR LOAD BUILDING

Urges Close Co-operation Among Hydro, Electrical Manufacturers And Dealers In Production And Distribution Of Electric Home Appliances

By L. S. TREUGE,

The Windsor Utilities Commission, Hydro Division

**I**N formulating the post-war load building programme it will be necessary for each municipality to act with bold initiative. Enterprise is the prerogative of all progressive organizations.



L. S. TREUGE

This spirit of enterprise has been characteristic of the development of Hydro in Ontario and of the growth of the electrical industry. Still greater accomplishments lie ahead. In the post-war period Hydro can help chronicle another progressive chapter in the history of this industry by standing ready to co-operate and offer guidance in the planning and designing of reasonably priced home appliances.

In an earlier article it was suggested that this aim might be achieved through close co-operation with all interests involved in the manufacture and distribution of electrical home appliances. The nucleus of an organization representing these interests is already in existence in Hydro, electrical manufacturers and the Electrical Appliance Dealers Association. There is an immediate need for complete liaison among these groups, as our basic interests run parallel and may be simply stated in the phrase, "greater sales of major domestic electrical appliances." The co-operation, which effective post-war load building will require, may be best fostered by an early and clear declaration of Hydro policy in this direction followed by a positive programme of assistance to both manufacturers and dealers.

Whether or not a municipal system operates a Hydro shop, the task of load building with reasonably-priced, quality electric appliances can be facilitated through a co-operative effort on the part of Hydro, the manufacturer and the electrical dealer.

## Basic Hydro Objective

The interest of the municipal system lies in placing electric ranges and other major current consuming devices in operation in as many homes of the lower income group as possible. Whether or not these ranges and appliances are distributed through Hydro is immaterial. Large scale conversion to complete domestic electrification in co-operation with dealers should be the basic Hydro objective. Hydro policy should be such that each electrical dealer will find it to his advantage to avail himself of the aid of his local Hydro system.

Each local Hydro should poll the electrical dealers in the district to ascertain the type, style, and price of major

domestic appliances which would best meet the needs of all income groups. This information should be assembled and correlated by the Provincial Commission. The findings should then be presented to the manufacturers with the suggestion that appliances to meet these specifications would find ready acceptance by Hydro, the dealers and consumers in both high and low income groups.

## Open Path to Greater Sales

Previous load building practice throughout the Province attempted to scale the price of electric ranges to the purse of the lower income group by means of a trade-in allowance. This was, in effect, a subsidy to the range manufacturer, and as such, was, in my opinion, economically unsound. Quantity production of a standard, reasonably-priced range will achieve the same objective as the subsidy, and at the same time, open the path to greater sales and production volumes, which will be the two most pressing needs of the post-war reconstruction period.

The success of the switch standardization resolution proposed in Windsor in June, 1942, is an excellent example of what may be achieved along the path of co-operative effort among all parties interested in electric range sales and service. A similar degree of concerted action between all agencies at this time should produce equally satisfactory results in the procurement of post-war appliances designed for all classes of customers.

The problem of wiring costs in converting homes to electrical cooking remains. To use a phrase which has become somewhat hackneyed, it is the chief bottleneck with which Hydro is concerned. In this direction a reasonable allowance would act as an extremely effective incentive towards conversion.

The possibility of moderately-priced range services should be studied intensively, and the advisability of Hydro absorbing the total cost of range wiring should be fully explored. If such a possibility is not realized, a reasonable wiring allowance should be offered every range purchaser, irrespective of the vendor. The instant and hearty co-operation of all electrical dealers and, I might add, of electrical journeymen, would be forthcoming, and the two chief drawbacks to intensive domestic load building would be overcome.

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*This is the second article submitted by Mr. Treuge, in which he expresses his opinions on the subject of Post-war Load Building.—The Editor.*





WE had a pleasant experience upon the occasion of our visit to Sarnia where we conducted Hydro Homemakers' Wartime Forums on the evenings of May 10 and 11 in the fine new Hydro building, capacity gatherings having attended both sessions.

A friendly spirit seems to radiate throughout this progressive Hydro organization which is now serving thousands of additional consumers because of the great influx of war workers into that city.

We received a cordial welcome from R. M. Durnford, chairman of the local commission, and his associates who had planned the forums as a service to the women of Sarnia. During the sessions two films were shown. One vividly portrayed how the most efficient service could be obtained from an electric refrigerator, while the other was the widely acclaimed Hydro technicolour movie, "The Romance Of A River."

Our part on the programme was to pass along hints on how to care for electric appliances in order that they may be made to serve efficiently for the duration. We thought some of these hints might be of interest to readers of this column and so we are going to pass a few along.

First, here are some things to remember about the electric range:

1. Acquire the habit of using the various elements with the heat best suited for the occasion—it will not only prove more economical,

but will prevent "boil-overs" which might impair the life of the element and mar the enamel finish.

2. Keep the oven clean—odours are often caused by heating a greasy oven. Turn the switches "off" and wipe up all "spillovers" in the oven or cooking surface, when the range has moderately cooled, using a damp cloth.

3. Keep oven heat deflector on the lower oven rack slides, and not on the bottom of the oven.

4. Leave the oven door ajar after you have finished baking.

5. Complete oven meals (meat, one baked vegetable, one steamed vegetable, relish and dessert) can be cooked in the electric oven, using the bottom element only. Leave about one inch of space around each baking dish.

6. Warn children not to strike the range with playthings. The enamel is glass; it will chip with abuse.

And now, here are some pointers on other electric appliances:

1. Put the electric warming pad away in a sturdy box, so that it will not be damaged.

2. Toasters require frequent cleaning with a soft brush or cloth. They should never be shaken to try and get rid of the crumbs. Another thing that does a toaster no good is to stab it with a fork whenever the toast or a crumb or raisin gets stuck in its "innards." Some day that fork will cause a short-circuit.

3. Sandwich grills, after being used for toasting gooey sandwiches, should be cleaned of all grease traces. Burning grease is the reason why "something smells funny" when the grill is used.

4. Coffee makers should be handled with great care and should be kept in a safe place, where they will not be broken. Once in a while rub them with a little baking soda.

5. The electric roaster should be kept clean. Disconnect before cleaning. Never immerse units in water. Do not use sharp metal tools to scrape it.

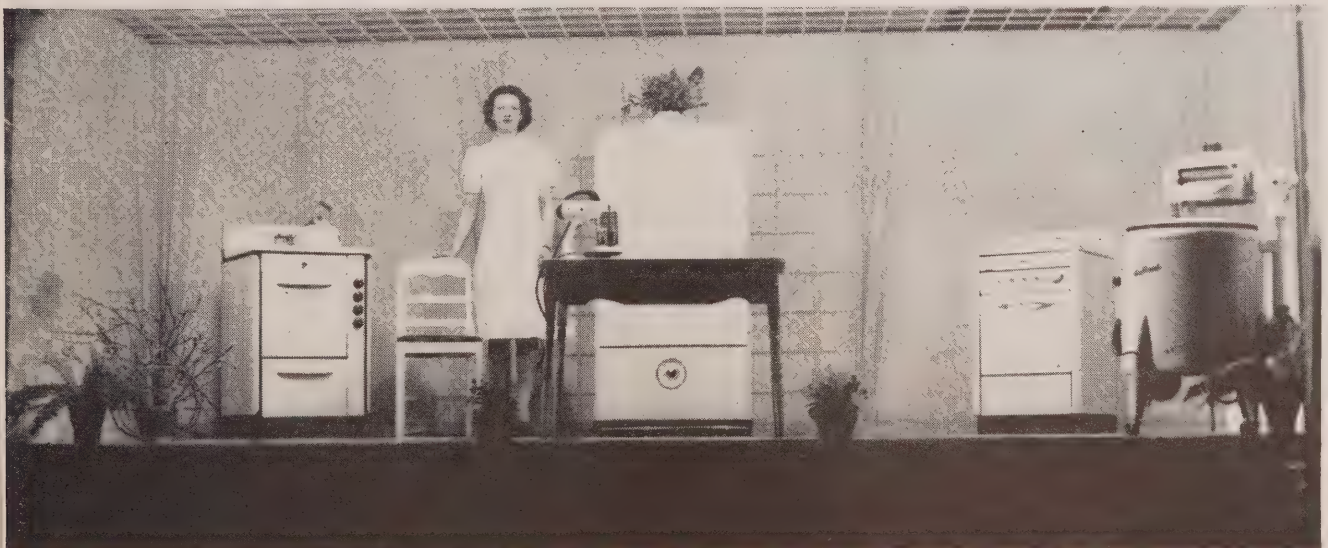
6. If the electric sewing machine runs heavily after standing idle for some time, use a little kerosene in the oiling places, run the machine rapidly and then wipe it clean and oil it.

7. Do not touch or use any electrical equipment while hands are wet. You may receive a shock.

8. Radios should be kept one inch away from any wall. To prevent overheating of not only tubes, but the transformers and resistors, free circulation of air is necessary—do not cover the back.

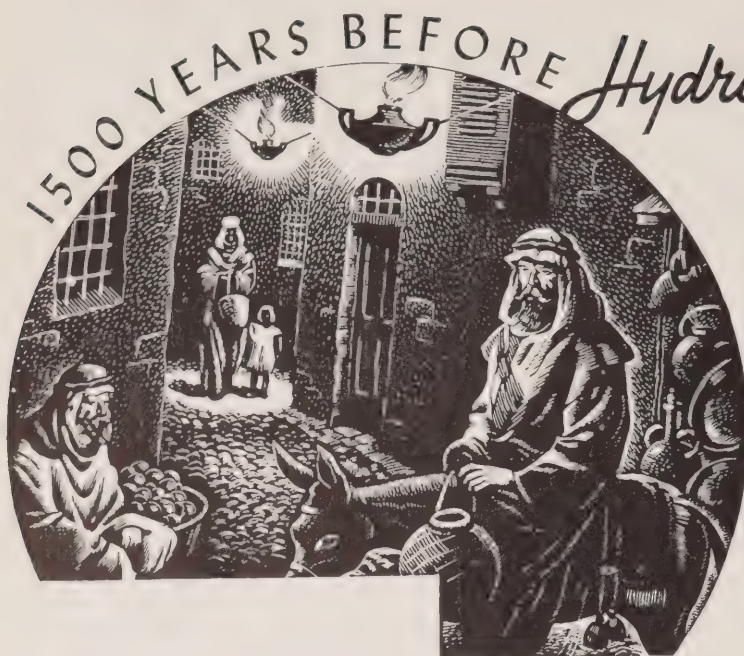
9. A word about hotplates. Avoid spilling cold water on hot elements and hot water on cold elements. When not in use, the elements can be protected by asbestos pads.

10. Once a year the electric clock should be taken to the electric repairman to be oiled. Only special "fine" oil is used.



THIS PICTURE was taken while Miss Muir was conducting the Hydro Homemakers' Wartime Forum at Sarnia where capacity audiences attended the sessions held in the new office building of the Sarnia Hydro-Electric Commission. Arrangements for the forum were made under the direction of Eric Parsons, the enterprising manager of the Sarnia Hydro shop.





**FLOURISHING** in the fourth century A.D., and famed for its luxury was the city of Antioch in Syria.

Great caravans from the east brought gold, silver, and precious stones to this thriving centre of trade and commerce. Here skilled artisans fashioned pretty baubles to catch the eye of milady in Rome.

Known as "The Queen of the East" it acquired an unfavourable reputation. During the hours of darkness it was not wise to travel the streets alone for fear of being set upon by robbers.

At that time, the city fathers had not the benefit of electricity for street lighting and so they had to fall back on crude lamps which they strung across the narrow winding streets on ropes.

The accompanying illustration is an artist's impression of this first attempt at street lighting.

## "FATHER OF HYDRO"

(Continued from page 6)

On many occasions he created the impression that he was "most intolerant" so far as other people's opinions were concerned, for he would frequently tell a man to his face, "You don't know what you are talking about." On the other hand, he liked people who would stand up to him.

There is one interesting incident which bears out this fact. A merchandise manager in a municipal Hydro shop inserted an advertisement in a newspaper one day. Sir Adam saw the advertisement, grabbed the telephone and proceeded to "burn up the wire." He demanded to know if the local merchandise manager were trying to antagonize a certain company whose relations with Hydro had been quite cordial.

Undaunted, the merchandise manager came back with the retort, "Who the hell am I working for, Sir Adam, the Hydro or the such and such company?"

"Attaboy, attaboy," replied Sir Adam and hung up the receiver.

One of Sir Adam's outstanding characteristics was his ability to inspire loyalty in those who worked for him. He has also been described as a man who had "a one-track mind" once he had satisfied himself that a certain course should be taken. When on a job he would "pursue it relentlessly to a close."

This did not mean, however, that he found it necessary to concentrate upon one matter at a time. He could keep "a score of things" moving at the same time, was thorough and skimmed no details, and got what he sought by "sheer weight of will."

The famous Beck artesian wells and the Queen Alexandra Sanatorium at London are today outstanding memorials to Sir Adam's public service in his adopted city.

His fight to have pure, spring water from artesian wells

rather than an inferior brand of filtered river water as the source of the city's water supply is in itself an interesting episode in Sir Adam's life.

He finally got his way when he told the city fathers that he would deliver one million gallons of water for \$100,000 and that the city would not have to assume any obligation until he "delivered the water."

Actually, he "delivered" more than one and a half million gallons and the total cost of the artesian well project was \$106,000, Sir Adam being out of pocket to the extent of \$6,000!

There is on record another, an entirely different story about Sir Adam. It is not a story about Sir Adam "the fighter" but one which reveals in him the spirit of a happy school boy having "a whale of a good time."

It happened one Sunday many years ago in London. There was an ice jam in the Thames river. On learning about the jam, he quickly made his way along the river, called out Hydro construction men and went to work with them, helping to blast the ice with dynamite.

When he began to feel hungry, he sent some one to purchase bread, butter and cheese. In company with the construction men he sat down at the side of the river and had a "meal." After it was over he resumed his "fun" with the dynamite.

The stately home in which Sir Adam resided in London was built sixty years ago by Ellis W. Hyman, who was the first member of the local water commission. It, too, still stands as a memorial to the "Father of Hydro."

Before his death in 1925, Sir Adam was sitting in a train as it clicked through the Ontario countryside one night.

Suddenly, he turned and nudged his companion and then pointed out the window.

"Look at that farm house," said Sir Adam. "Look at the light there. That is what I worked for."



# IT'S SERIOUS NO FOOLIN'

By W. H. CARR

Hydro Victory Garden Committee

**N**O attempt is being made to cry "wolf" when we say that the shortage of both fresh and processed vegetables will be serious this year.

We mean just that—SERIOUS.

Last year the situation was bad, but Canadians are fortunate for the time being in that the Southern States had bumper crops last year and, as a result, our "neighbour" was able to let us share her supplies.

The present outlook for next year indicates that we shall have to fend for ourselves. Many folks seem to forget that the shortage of experienced farm help is more acute this year. On the top of that we have another problem. A large percentage of all our crops has to be processed to meet the needs of countries which will be liberated when the Allies march in. Then, of course, we must meet the demands of our armed forces and send large supplies of produce to the people of Britain.

## Plan your garden



This year we can't take a chance and just depend on our neighbour to the south.

We have to do something about it, and that something is to get busy and start a victory garden without delay.

Yes, there's still time, but very little.

The majority of this year's Hydro victory gardeners are now well under way and doing a fine job. These people know what their present efforts will mean to themselves and their families later on when vegetables and fruits are likely to be very scarce.

Now, just a word to Hydro employees. Some who registered last year have not yet forwarded this year's reg-



**Choose good soil**

istration forms. As soon as these employees send in their forms they will receive all the latest available information on victory gardening.

It is important that the job be started not later than the middle of June.

Those who are in a position to start a victory garden and who fail to do so are failing in their duty at a critical hour in the history of our country.

That is an outspoken statement, but it's time for straight talking, even if it means we are attempting to interfere with golf, tennis, bowling and other sports.

The majority of our active Hydro victory gardeners like to take part in most of these sports, but they have decided to put duty before personal pleasure.

Now, let's all get busy and do the kind of job which will help ourselves and give the boys overseas "a lift."

They will be interested in hearing how these victory gardens are coming along.



**Fertilize well**

## RAIN OR SHINE?

(Continued from page 15)

information of thunder storms except by placing everyone associated with the electric power services on the alert.

Fog, drizzle and damp periods may, at critical temperatures, be related to glaze deposits, and are, of themselves, important, especially after long dry or frosty periods. Fogs are extremely important to other operations, especially aviation, so much so that fog is now successfully forecast to the extent that, for the sake of safety and comfort of passengers, the despatching of important commercial aviation services is deferred because of forecasting of fogs made available over long tropical routes by as much as 24 hours in advance.

### Weather Stress Problems

The power utilities are interested in fog data, especially during the winter months, since during a period of cold weather there is an accumulation of certain chemical particles or deposits which are attracted to, or which form on, the electrically charged surface of insulators, especially in urban areas. As a result, when a fog or light rainfall is experienced at the end of a winter, seasonal flashovers are likely to occur more frequently than at any other time except during lightning storms.

There appears to be no end to the problems caused by weather stress with which the operators of electric utilities must cope. Many of these operators are now being trained to take precautions against stress of weather by having all reserve and repaired equipment immediately available for service.

Power regulatory bodies in the United States are now using records of precipitation, as issued, for instance, by the Water Resources Branch of the U.S.A. Geological Survey, to the extent that they know at a given time the amount of snow which is still to melt and to be added to the estimated rainfall.

In the Province of Ontario, snow surveys are carried out by the Dominion Water and Power Bureau in conjunction with The Hydro-Electric Power Commission and other interests. These surveys cover more or less completely, the Winnipeg, English, Nipigon, Abitibi, Sturgeon, Wanapitei, Muskoka, and Madawaska drainage areas. The surveys are made at intervals between January 1, and March 1, in each year, and the final report is issued as soon after the latter date as possible. The results of the earlier surveys are also made available as the work is completed.

These surveys, which indicate the depth of snow on the ground and its water content, are used to estimate the probable water yield from snow cover during the ensuing spring run-off, and permit a forecast of the probable amount of water that may be stored.

Present indications show that in the post-war period, weather forecasting will become more and more interwoven with the operations of public utilities. At the same time, it will become a service which will be vital to the successful functioning of many industries.

## MECHANIZED SUN TO HEAT DREAM HOME OF FUTURE?

THE dream house of tomorrow may use electricity as a mechanical sun, if experiments being conducted by Carl F. Boester, head of the Department of Housing Research at Purdue University, prove successful.

Mr. Boester is experimenting with the theory that so long as the heat dissipated from the body through respiration and convection is replaced by radiation, no discomfort is experienced.

The experiments were suggested by the fact that a person dressed in a bathing suit is quite comfortable while standing on the snow slopes of Sun Valley. This, it is claimed, is due to the fact that the snow reflects, rather than absorbs, the heat radiated by the sun, and that this radiation equalizes the body's heat loss.

Walls of the new dream house would be made to reflect, not absorb heat, and Mr. Boester estimates the cost of heating an average house in this manner would run only \$3 to \$5 per month.

## CONCERNING CANNING

**Q. Is it advisable to buy fruits and vegetables at the market when you intend to can them?**

A. In the case of fruits, yes, if they are fresh and in good condition. Vegetables should be canned as soon as possible after they are gathered. From garden to jar within two hours is a safe rule.

**Q. Will new containers for home canning be available this year?**

A. Yes, a quantity of pint jars is expected. Reserve these for vegetables. There will be zinc tops, and synthetic rubber rings will be available for the different types of jars; ask for rings to use with vacuum type, screw-top or spring-top jars.

**Q. What special equipment is required for home canning?**

A. For canning fruits and tomatoes a simple method is to use the electric oven if you have an automatic control. If you haven't a regular water-bath canner for vegetables you can use a wash boiler or covered kettle deep enough to allow the water to come at least one inch above the tops of the cans or jars. Plan to share canning equipment in the form of a pressure cooker or sealing machine for cans. Pickling and storage methods must also be considered.

**Q. Has the method of canning fruit without sugar been successful?**

A. Yes, sterilization is not affected by sugar. This year, plan to can rather than preserve some of the fruits.

**Q. Where can we get reliable information on exact times and procedure?**

A. Plans have been made by the Hydro Victory Garden Campaign Committee for a canning demonstration for the Toronto district on June 29.



# OTTO HOLDEN TO RECEIVE DOCTOR OF ENG. DEGREE

At University Of Toronto Convocation  
On Thursday, June 8

OTTO HOLDEN, chief hydraulic engineer of The Hydro-Electric Power Commission of Ontario, will be honoured by his Alma Mater on Thursday, June 8, when at a convocation of the University of Toronto, he will receive the degree of Doctor of Engineering.



Following his graduation in 1913, Mr. Holden became identified with the Commission and served in various capacities with the hydraulic department until May, 1924, when he became assistant hydraulic engineer to Dr. Thomas H. Hogg. When the latter took over the duties of chairman in November, 1937, Mr. Holden was appointed chief hydraulic engineer.

## "Tasha" Called By Free French

NATALIE "TASHA" VOUKSANOVITCH, who has been a technician in the electrical section of the H.E.P.C. laboratories for the past year, has been called upon by the Free French authorities to undertake special wartime duties, and is now in Washington, D.C.

Miss Vouksanovitch, whose father is a Yugoslavian and whose mother is English, was born in Nice, France. She has resided in many of the European countries and is an accomplished linguist, speaking five languages.

At the time the Japs entered French Indo-China in 1941, Tasha was living in the city of Saigon and remained there under Japanese rule for six months, after which she managed to leave the country and, eventually, reached the United States.

Coming to Canada in October, 1941, she became identified with a large departmental store in Toronto as a French stenographer, and in April, 1943, she joined the Commission's staff as a technician.

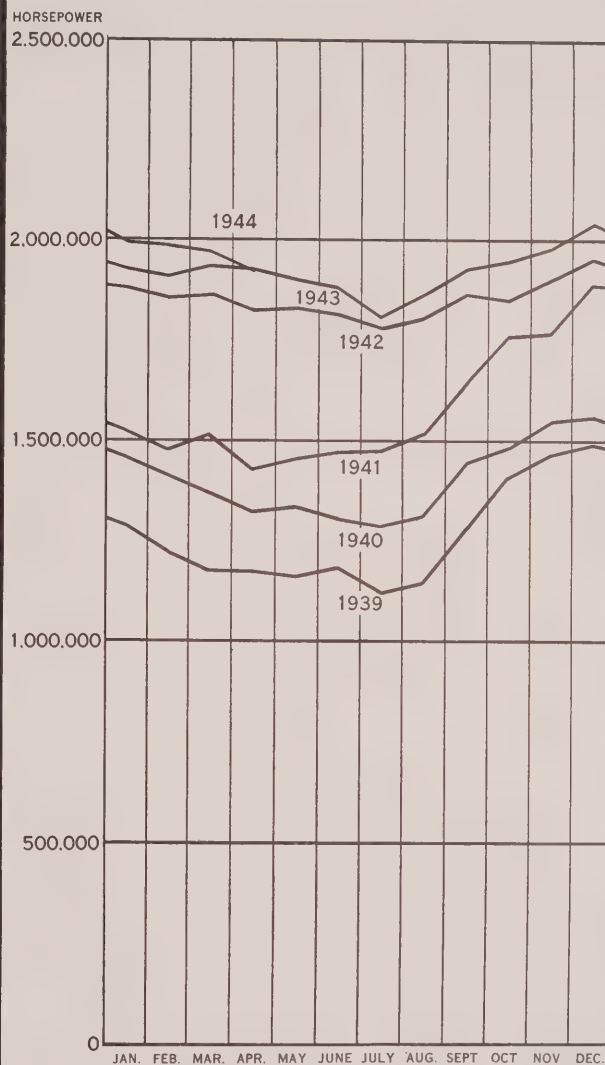
Before she left the commission, Tasha recalled a few of her experiences while at Saigon. Nobody, she told Hydro News, could say anything after the Japanese occupation. If the Japs wished to occupy any house or building, the occupants were simply "pushed out." She stated that the residents of Saigon found the manners of the Jap soldiers very difficult to endure.

All food was very strictly rationed. There was no cheese and no butter, and other regular items of diet were very scarce, Tasha said.

When questioned as to whether she had seen any fighting, she said that she had witnessed a number of street clashes between native soldiers and Japs.

## SOUTHERN ONTARIO SYSTEM EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

### PRIMARY LOAD



### PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	APRIL, 1944	APRIL, 1943	
SOUTHERN ONTARIO SYSTEM...	1,926,224	1,930,991	- 0.2
THUNDER BAY SYSTEM.....	103,887	99,102	+ 4.8
NORTHERN ONTARIO PROPERTIES	207,240	211,678	- 2.1
TOTAL.....	2,237,351	2,241,771	- 0.2

### PRIMARY AND SECONDARY LOADS

SOUTHERN ONTARIO SYSTEM...	2,072,780	1,985,146	+ 4.4
THUNDER BAY SYSTEM.....	121,314	129,759	- 6.5
NORTHERN ONTARIO PROPERTIES	263,427	259,265	+ 1.6
TOTAL.....	2,457,521	2,374,170	+ 3.5

# MUNICIPAL LOADS, MARCH, 1944

## SOUTHERN ONTARIO SYSTEM

### NIAGARA DIVISION

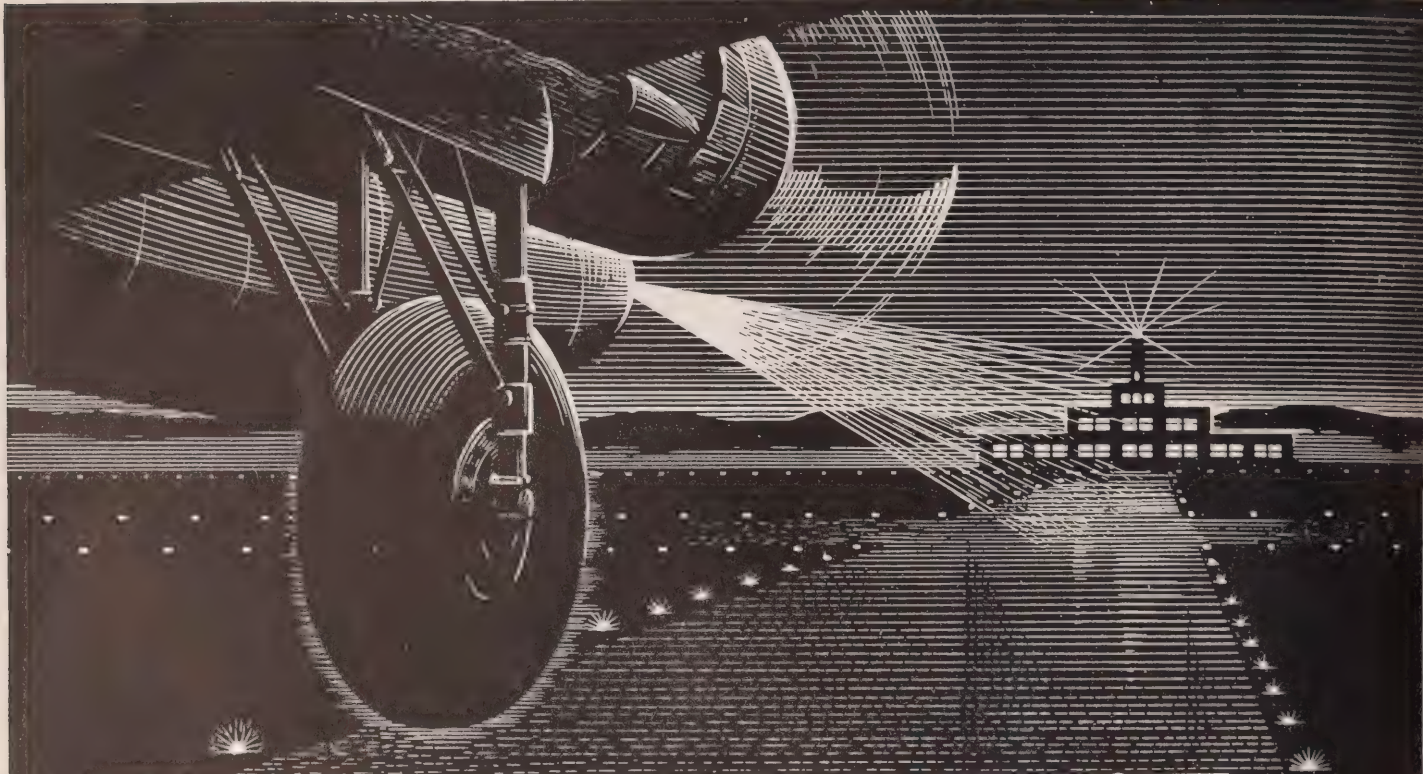
SOUTHERN ONTARIO SYSTEM			H.P.	Popula- tion	H.P.	Popula- tion		
NIAGARA DIVISION								
	H.P.	Popula- tion	Erieau -----	80	281	Oakville -----	1,172	3,369
			Erie Beach -----	8	21	Oil Springs -----	185	541
Acton	1,594	1,903	Essex	565	1,886	Oterville -----	84	P.V.
Agincourt	175	P.V.	Etobicoke Twp. -----	7,732	V.A.			
Ailsa Craig	132	487	Exeter	648	1,654	Palmerston -----	561	1,400
Alvinston	109	649				Paris -----	2,064	4,604
Amherstburg	950	2,704	Fergus -----	1,227	2,759	Parkhill -----	174	1,029
Ancaster Twp.	348	V.A.	Fonthill -----	168	860	Petrolia -----	999	2,768
Arkona	61	403	Forest -----	504	1,562	Plattsville -----	145	P.V.
Aurora	1,280	2,821	Forest Hill -----	7,085	12,172	Point Edward -----	1,661	1,199
Aylmer	813	1,985				Port Colborne -----	2,265	6,928
Ayr	157	760	Galt -----	11,659	15,126	Port Credit -----	841	1,934
			Georgetown -----	1,801	2,452	Port Dalhousie -----	865	1,599
Baden	562	P.V.	Glencoe -----	177	763	Port Dover -----	398	1,790
Beachville	754	P.V.	Goderich -----	1,558	4,674	Port Rowan -----	109	700
Beamsville	452	1,227	Granton -----	65	P.V.	Port Stanley -----	288	824
Belle River	167	836	Grimsby -----	764	1,988	Preston -----	4,335	6,656
Blenheim	553	1,873	Guelph -----	12,127	23,074	Princeton -----	136	P.V.
Blyth	87	662						
Bolton	226	629	Hagersville -----	528	1,524	Queenston -----	104	P.V.
Bothwell	131	683	Hamilton -----	164,355	164,719			
Brampton	2,479	6,157	Harriston -----	406	1,292	Richmond Hill -----	493	1,295
Brantford	23,251	31,622	Harrow -----	518	1,092	Ridgetown -----	647	1,986
Brantford Twp.	1,086	V.A.	Hensall -----	176	686	Riverside -----	1,183	5,235
Bridgeport	117	P.V.	Hespeler -----	2,966	2,938	Rockwood -----	97	P.V.
Brigden	83	P.V.	Highgate -----	101	322	Rodney -----	137	758
Bronte	152	P.V.	Humberstone -----	583	2,831			
Brussels	133	784				St. Catharines -----	30,588	34,541
Burford	202	P.V.	Ingersoll -----	3,437	5,757	St. Clair Beach -----	82	138
Burgessville	45	P.V.	Jarvis -----	189	513	St. George -----	143	P.V.
Burlington	1,515	3,925				St. Jacobs -----	336	P.V.
Burlington Beach	337	1,474	Kingsville -----	612	2,453	St. Marys -----	1,522	4,009
			Kitchener -----	28,010	35,456	St. Thomas -----	8,219	17,045
Caledonia	346	1,430				Sarnia -----	11,283	18,599
Campbellville	37	P.V.	Lambeth -----	122	P.V.	Scarborough Twp. -----	4,288	V.A.
Cayuga	120	700	LaSalle -----	227	907	Seaforth -----	918	1,782
Chatham	7,422	17,184	Leamington -----	1,650	6,048	Simcoe -----	2,687	6,340
Chippawa	346	1,228	Listowel -----	1,431	2,984	Smithville -----	142	P.V.
Clifford	95	491	London -----	40,313	77,105	Springfield -----	61	382
Clinton	585	1,879	London Twp. -----	575	V.A.	Stamford Twp. -----	2,710	8,275
Comber	120	P.V.	Long Branch -----	1,228	4,258	Stoney Creek -----	229	933
Cottam	73	P.V.	Lucan -----	185	643	Stouffville -----	237	1,198
Courtright	45	355	Lynden -----	110	P.V.	Stratford -----	7,147	17,163
						Strathroy -----	1,518	2,834
Dashwood	104	P.V.	Markham -----	311	1,175	Streetsville -----	230	701
Delaware	67	P.V.	Merlin -----	85	P.V.	Sutton -----	161	949
Delhi	640	2,430	Merritton -----	12,258	2,916	Swansea -----	3,045	6,907
Dorchester	89	P.V.	Milton -----	1,303	1,915			
Drayton	114	528	Milverton -----	375	994	Tavistock -----	593	1,080
Dresden	474	1,535	Mimico -----	2,569	8,354	Tecumseh -----	349	2,331
Drumbo	95	P.V.	Mitchell -----	771	1,670	Thamesford -----	210	P.V.
Dublin	47	P.V.	Moorefield -----	55	P.V.	Thamesville -----	184	816
Dundas	3,026	5,245	Mount Brydges -----	91	P.V.	Thedford -----	105	598
Dunnville	1,355	3,916				Thorndale -----	60	P.V.
Dutton	244	830	Newbury -----	41	288	Thorold -----	2,800	5,284
			New Hamburg -----	619	1,441	Tilbury -----	1,502	1,923
East York Twp.	8,303	41,578	Newmarket -----	1,638	3,800	Tillsonburg -----	1,491	4,602
Elmira	1,204	2,069	New Toronto -----	12,735	9,469	Toronto -----	354,920	657,612
Elora	407	1,185	Niagara Falls -----	10,636	20,371	Toronto Twp. -----	2,797	V.A.
Embro	174	420	Niagara-on-the-Lake -----	685	1,764	Trafalgar Twp. -----	454	V.A.
			North York Twp. -----	10,034	V.A.			
			Norwich -----	409	1,301			



# MUNICIPAL LOADS, MARCH, 1944

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Wallaceburg	4,263	4,802	Neustadt	46	431	Lakefield	416	1,301
Wardsville	35	221	Orangeville	684	2,558	Lanark	77	686
Waterdown	214	867	Owen Sound	5,921	13,559	Lancaster	39	570
Waterford	486	1,294	Paisley	108	530	Lindsay	3,244	8,345
Waterloo	5,659	8,968	Penetanguishene	1,099	4,177	Madoc	178	1,130
Watford	365	1,023	Port Carling	106	520	Marmora	116	1,004
Welland	10,808	14,899	Port Elgin	394	1,415	Martintown	34	P.V.
Wellesley	94	P.V.	Port McNicoll	85	950	Maxville	103	811
West Lorne	255	768	Port Perry	226	1,175	Millbrook	92	749
Weston	5,038	6,333	Priceville	10	P.V.	Morrisburg	273	1,484
Wheatley	191	761	Ripley	103	420	Napanee	1,252	3,241
Windsor	54,358	118,040	Rosseau	22	305	Newcastle	135	701
Woodbridge	616	946	Shelburne	217	1,053	Norwood	139	710
Woodstock	8,472	12,339	Southampton	535	1,467	Omeme	163	630
Wyoming	75	538	Stayner	237	1,106	Orono	101	P.V.
York Twp.	20,033	77,175	Sunderland	69	P.V.	Oshawa	18,183	26,610
Zurich	117	P.V.	Tara	106	510	Ottawa	36,048	150,861
GEORGIAN BAY DIVISION			Teeswater	147	873	Perth	1,734	4,197
Alliston	356	1,700	Thornton	39	P.V.	Peterborough	11,894	24,977
Arthur	143	1,089	Tottenham	79	532	Picton	1,170	3,400
Bala	119	355	Uxbridge	246	1,480	Port Hope	2,319	4,997
Barrie	4,029	355	Victoria Harbour	70	979	Prescott	1,402	3,318
Beaverton	165	941	Walkerton	957	2,534	Richmond	67	428
Beeton	162	617	Waubushene	71	P.V.	Russell	59	P.V.
Bradford	160	1,041	Warton	248	1,750	Smiths Falls	2,899	7,741
Brechen	50	P.V.	Windermere	25	117	Stirling	243	947
Cannington	139	761	Wingham	661	2,149	Trenton	4,921	8,183
Chatsworth	70	333	Woodville	67	439	Tweed	186	1,181
Chesley	499	1,812	EASTERN ONTARIO DIVISION			Warkworth	64	P.V.
Coldwater	146	545	Alexandria	187	1,976	Wellington	168	948
Collingwood	2,609	6,249	Apple Hill	37	P.V.	Westport	85	725
Cookstown	70	P.V.	Arnprior	1,204	4,019	Whitby	1,284	4,236
Creemore	117	661	Athens	89	626	Williamsburg	71	P.V.
Dundalk	212	686	Bath	36	325	Winchester	332	1,017
Durham	343	1,874	Belleville	7,395	15,498	THUNDER BAY SYSTEM		
Elmvale	140	P.V.	Bloomfield	83	636	Fort William	14,410	30,370
Elmwood	55	P.V.	Bowmanville	2,880	3,850	Nipigon Twp.	193	V.A.
Flesherton	65	452	Brighton	350	1,462	Port Arthur	20,572	24,217
Grand Valley	124	645	Brockville	4,557	11,112	NORTHERN ONTARIO PROPERTIES		
Gravenhurst	1,074	2,261	Cardinal	242	1,602	Nipissing District		
Hanover	1,274	3,190	Carleton Place	1,690	4,143	North Bay	4,555	16,013
Holstein	21	P.V.	Chesterville	256	1,094	Patricia District		
Huntsville	1,092	2,943	Cobden	120	643	Sioux Lookout	300	1,967
Kincardine	659	2,483	Cobourg	2,015	5,907	Sudbury District		
Kirkfield	24	P.V.	Colborne	213	960	Capreol	229	1,660
Lucknow	390	856	Deseronto	200	1,002	Sudbury	8,868	35,812
Markdale	163	776	Finch	75	396			
Meaford	655	2,759	Frankford	123	1,095			
Midland	4,103	6,764	Hastings	101	823			
Mildmay	123	764	Havelock	118	1,103			
Mount Forest	424	1,936	Iroquois	209	1,123			
			Kemptville	335	1,230			
			Kingston	14,148	29,545			

# HYDRO *Lightens* The Way!



## **Ready to serve . . . 24 hours a day**

- In the early days of commercial flying, hours of daylight were far too short. The mantle of night automatically cancelled flying schedules. But . . . because electrical engineers discovered ways and means of flooding runways with light . . . swift couriers of the air tonight are cutting hours off time, carrying precious burdens of humanity and vital correspondence that may mean the saving of thousands of dollars before tomorrow's workday has been completed.

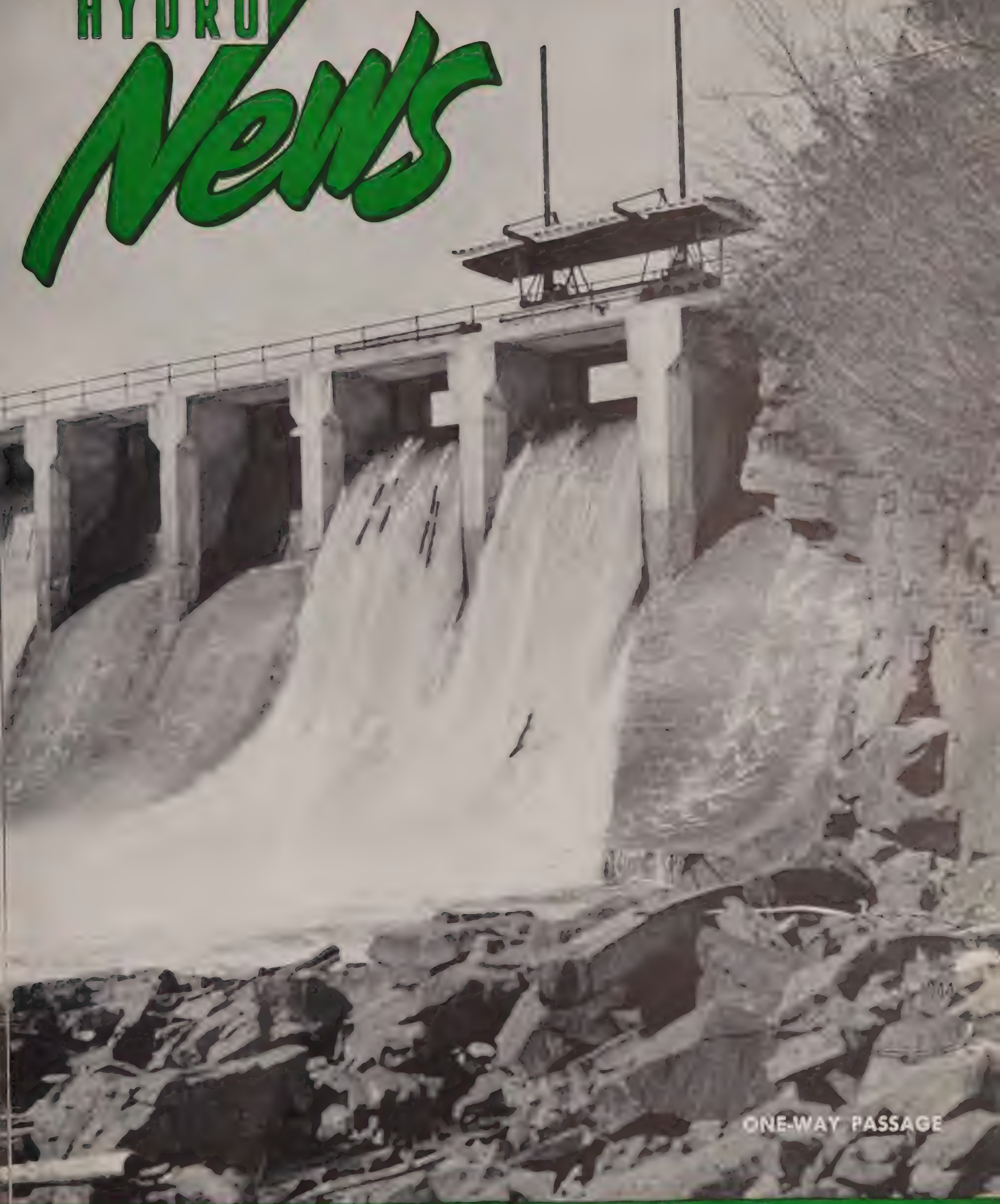
Electricity has not only helped to make flying economically sound, but, with the aid of modern electronics, flying is safer. Today . . . tonight . . . airplanes are guided safely, surely on their course by a beam of electrical waves which electronics made possible. In every field of endeavor, as in the field of aviation, electricity stands ready to serve 24-hours a day.

The development of electrical devices in the field of aeronautics is but one indication of what lies ahead for the world of tomorrow. In the electrical field it can be truly said . . . the best is yet to come. Electricity is the servant of mankind. In commerce . . . in industry . . . at home and on the farm . . . it lightens our tasks, makes life more comfortable. Plan and save now, so that, when the day of peace arrives, you will be ready to enjoy more of the benefits that electricity can bring you.

**THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO**



# HYDRO *News*



ONE-WAY PASSAGE

VOL. 31

JULY, 1944

NUMBER 7





# Power

## PACES ONTARIO'S WAR PRODUCTION

Hydro and Ontario's Industries work side by side to produce the weapons of war!

The roar of Ontario's industries, working twenty-four hours a day, is thundering Canada's challenge to the Axis. Production is mounting month by month. Records are broken with almost monotonous sequence. The trickle became a stream . . . the stream has turned into a torrent reaching every battle front.

And the power that helps make this production possible is Electric Power.

Power is essential to our war effort. Until peace comes Hydro turbo-generators will continue to produce this vital element day and night, without rest . . . helping Ontario's industries set the "all-out" pace for Victory. Greatly increased quantities of power have been provided by Hydro since war began. However . . . even with this additional supply . . . there is not enough today to permit wide-spread use as in peace-time. Already many Hydro consumers have voluntarily played a splendid part in saving electricity. But there can be no "let up"—this conservation must continue and be increased to provide power to meet the growing demands of war industries.

We look to the days of peace when there will be power for every use. In the meantime . . . do your part . . . invest in Victory by saving your share of electricity every day.







# THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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## The Front Cover



WITH a mighty roar,  
the pent-up waters  
behind the dam hurl logs  
through the sluiceways on  
their one-way journey to  
make the paper on which,  
perhaps, this magazine is  
printed. This month's front  
cover illustration, taken by  
C. K. Duff, of the Com-  
mission's operating depart-  
ment, shows a section of  
the spillways at Cameron  
Falls. The logs may be  
seen shooting through on  
their journey to the paper  
mills.

Volume 31

July 1944

Number 7

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## A MAN AND HIS *Dogs....*

THERE are dogs in the life of J. Clare Johnston who, for the past 19 years, has been manager of the Etobicoke Public Utilities Commission. This quiet-spoken, unassuming native of Orangeville has been interested in canine company for many years. It used to be spaniels, but his present four-footed friends are the two aristocratic English setters shown above. Answering to "Meg" and "Mike," they really enjoy taking part in field trials. When interviewed by Hydro News, they agreed that it really would not be cricket to even glance at quail and partridge between April 1 and September 1 when there is a legal taboo on "getting the bird."



## \* Page Three \*

### THE THIRD MEMBER

**A** N NOUNCEMENT by Prime Minister George A. Drew that W. Ross Strike of Bowmanville has been named as the third member of The Hydro-Electric Power Commission of Ontario will be received with keen interest in Hydro circles throughout the province.

Mr. Strike is widely known, and is recognized as a man who can bring to his new and highly responsible position an intimate knowledge of the problems and functions of Hydro. This knowledge has been acquired by close association with, and administration of, Hydro affairs in his own municipality and in the Ontario Municipal Electric Association of which he is president. Mr. Strike, who graduated in law from Osgoode Hall, served Bowmanville as mayor for five years and has been a member of the local commission for the past eleven years, and is at present its chairman.

In joining Dr. Thomas H. Hogg, chairman and chief engineer, and Hon. George H. Chalmers on the Ontario Commission, Mr. Strike will bear with him the best wishes of his many friends throughout the province. In assuming his new duties, he will find wider scope and opportunity for service to the people of Ontario.

### WORTHY OF DISTINCTION

**I**N conferring the degree of Doctor of Engineering upon Otto Holden, chief hydraulic engineer of The Hydro-Electric Power Commission of Ontario, the University of Toronto has not only honoured a man worthy of the distinction, but it has honoured the Commission which he has served for over thirty years.

Since Hydro came into being in this Province, it has set and maintained, the highest standard in all its engineering undertakings and has established a record of achievement of which the people of Ontario have reason to be proud. Like Dr. Thomas H. Hogg, chairman and chief engineer, who was formerly chief hydraulic engineer of the Commission, Dr. Holden has made a noteworthy contribution to the development of Hydro.

The spirit of loyalty and conscientious effort, which has marked the service of these

two men, has been characteristic of the service of individual employees in all departments of the Commission.

The words of Longfellow in his poem, "The Builders," might be used as a fitting epitome in relation to Hydro. These words are:

All are architects of Fate,  
Working in these walls of Time;  
Some with massive deeds and great,  
Some with ornaments or rhyme.

Those who have dedicated their knowledge, talents and lives to the progressive development of Ontario's great public ownership enterprise, can be described as "Builders" in the most constructive sense of the word. And some, truly, have to their credit, "massive deeds and great."

### "EIGHTH WONDER"

**N**ATURE, in her slow, inexorable way, brings about far-reaching changes which make an impact upon the life and destiny of man.

By devious and mysterious processes, extending over millions of years, she fashions water, rock, animal life and vegetation into the fabric of her great handiwork whose massive eminence and rugged splendour sometimes seem to dwarf the descriptive power of words.

Perhaps one of the most impressive examples of Nature's architecture is to be found in the wild, dynamic grandeur of Niagara Falls.

Many interesting and enlightening facts associated with the creation of The Falls are discussed in the article, "Lowly Pioneers," published in this issue of Hydro News. From these facts, substantiated by eminent authorities, it would appear that all who now enjoy the blessings and benefits of Hydro power generated at Niagara, must acknowledge the humble, but nonetheless important, contribution made by the shellfish and sponges when "construction" of this unique spectacle and source of water power was started by Nature, millions of years ago.

Today, their skeletons, entombed in many parts of the hard limestone which forms the capping rock of the gorge, bear testimony to the fact that they were really in "on the ground floor."

Of the part played by these "Lowly Pioneers" perhaps it might be said, "They built better than they knew."

# Lowly Pioneers



## Shellfish And Sponges Were Really In "On Ground Floor" In Helping Nature Blueprint Niagara Falls Three Hundred And Fifty Million Years Ago

SHELLFISH, to most of us, are things you find along the seashore, or items with French names on the à la carte section of a menu. And a sponge—well it's useful when bathing little Johnny.

But there's more to it than that.

Some three hundred and fifty million years ago, ancestors of these lowly shellfish and sponges were actually pioneer builders of Nature, co-operating in the construction of a tremendous project which, over the past thirty years, has helped revolutionize the industrial life of Ontario, and which today, is a vital force in the fight for world freedom.

That project is Niagara Falls, one of the greatest sources for the generation of Hydro power.

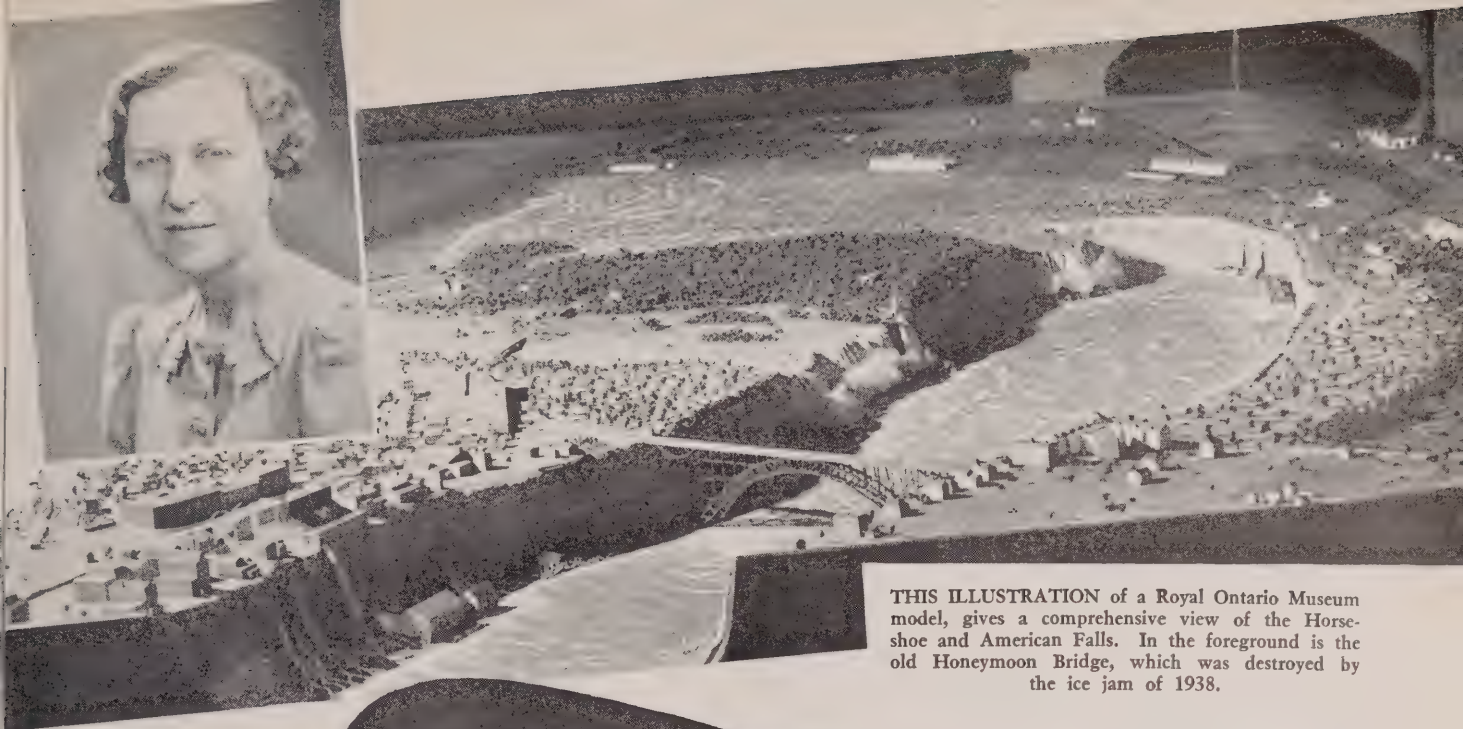
Few of the thousands of tourists and honeymooners who have gazed in wonder at the great avalanche of water which foams and cascades over the precipitous rocks of Niagara have recognized the contribution made by shellfish and sponges to the building up of this majestic creation of Nature.

An interview with Dr. Madeleine A. Fritz, assistant director of the Royal Ontario Museum of Palaeontology, will convince any skeptic that this is not just another "fish

*(Continued on page 6)*



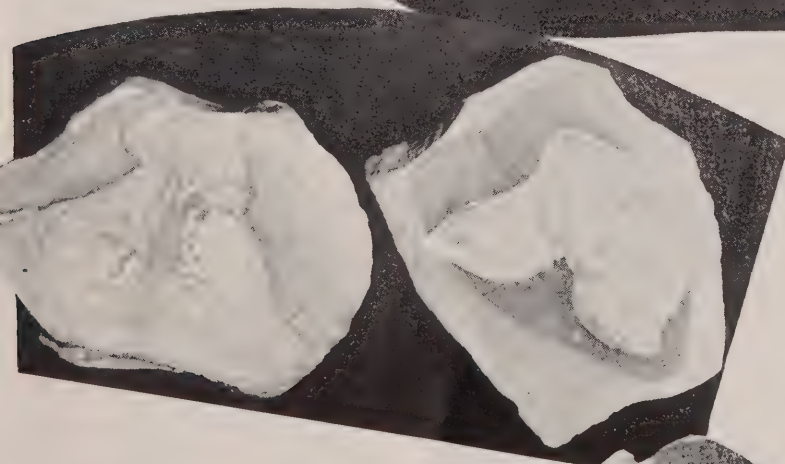
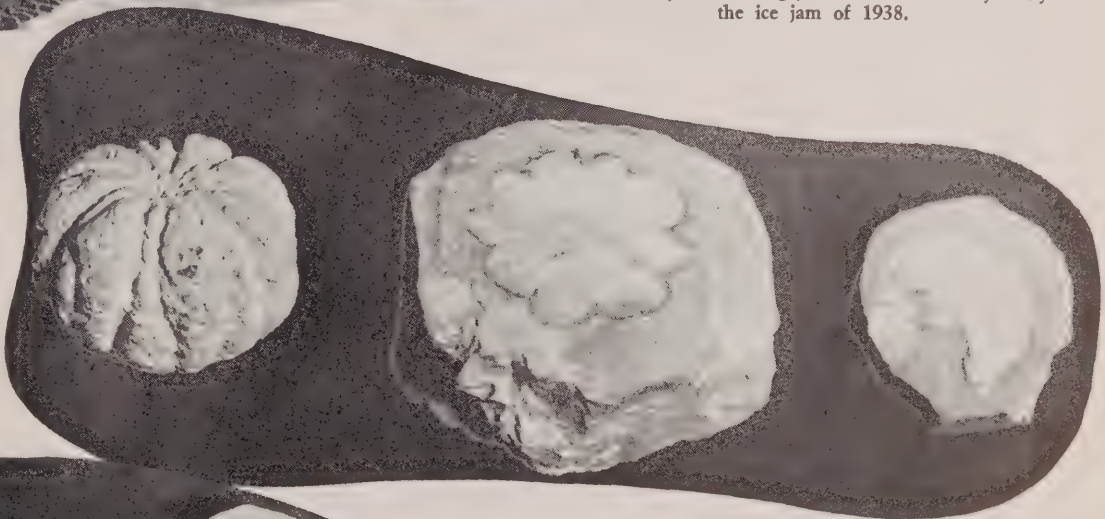




THIS ILLUSTRATION of a Royal Ontario Museum model, gives a comprehensive view of the Horseshoe and American Falls. In the foreground is the old Honeymoon Bridge, which was destroyed by the ice jam of 1938.

IN THE upper left hand corner is Dr. Madeleine A. Fritz, a Fellow of the Royal Society of Canada, who is assistant director of the Royal Ontario Museum of Palaeontology.

RIGHT: In palaeontological circles, these fossils are designated as Caryomanon Roemeri, otherwise known as a typical specimen of lithistid sponge. Note the outline of the sponge clearly defined in the rock.



ANOTHER EXAMPLE (above) of the sponge formations found in Niagara (Lockport) rock, which is part of the Hamilton mountain, and on the right is shown a modern siliceous sponge from which the soft tissue has been removed.



Photographs of fossils, rock formations and the scale model of Niagara Falls, accompanying this article, were taken through the courtesy and co-operation of the Royal Ontario Museum.—The Editor.



story," but that the shellfish and sponges were really in "on the ground floor" on this job in both a literal and practical sense.

Dr. Fritz, who is a recognized authority on the science of fossil organic remains, is a Fellow of the Royal Society of Canada, being the third woman to have been accorded this distinction. She received her Bachelor of Arts degree from McGill in 1919, and the Doctor of Philosophy degree from the University of Toronto in 1926. In 1935 she was appointed lecturer at this university and, two years later, became assistant professor. Later in the same year, 1937, Dr. Fritz was named acting director and then assistant director of invertebrate palaeontology at the Royal Ontario Museum.

It was to this eminent authority, Hydro News presented a number of really "ticklish" questions on Niagara Falls, and she had an answer for each one.

### Nature's Blueprint For Niagara

It would appear that Nature started on the Niagara blueprints some three hundred and fifty million years ago when part of this continent was a vast sea teeming with shellfish, sponges and other lowly organisms. The sponge, it seems, is one of the lowest types of animal life and is known as an invertebrate, as it has no spine and, for that

Lockport dolomite.

(Rochester shale member.)  
Clinton formation.

(Thorold sandstone member.)

Albion sandstone.

(Whirlpool sandstone member.)

Queenston shale.



AN ARTIST'S conception of a section of the brink of Niagara Falls showing the arrangement of hard and soft strata and illustrating the process of erosion.

matter, no bones. Its intake of food is accomplished by imbibing water containing minute organisms and particles of organic matter through its various pores and canals, and eliminating what it does not need through other pores.

Eventually, after millions of years, according to Dr. Fritz, the sea gradually receded, leaving behind the limy oozes and mud which formed the ancient sea floor. These sediments, in the course of time, consolidated to form hard limestones and shales. If you were to examine closely this dolomitic limestone, you would see entombed the hard, glass-like skeletons and isolated siliceous spicules of sponges that often form chert nodules. These highly insoluble concretionary nodules give added rigidity to the sedimentary rock or limestone which forms the capping of the gorge and the rocks over which Niagara Falls flow. Beneath this hard rock are comparatively soft shales or compacted mud.

Following this first chapter in the history of the Niagaran region a great gap occurs in the record and nothing further is known until within the last million years when "General Ice" invaded this part of Ontario. The cause of the great glacial invasion has never been altogether satisfactorily determined, but the fact that it did occur is well established. The glaciers spread and retreated at least four times during the Pleistocene period. There were mild spells between some of these invasions, when the climate was probably warmer than at the present time. Fossils of warm water shells and bits of trees and plants, which have been found, bear witness to these moderate interglacial climates.

When the ice finally melted, the river or drainage systems were blocked up by debris left by the melting ice. It will be readily seen that the water from the upper reaches of the present lake system had to find a way out and, eventually, found some lowland in the neighbourhood of Queenston Heights and there started to spill over the "mountain," which is part of the Hamilton mountain, into the drainage system (the old Laurentian basin), which would ultimately take it out to the Atlantic Ocean.

In falling over this small "mountain" the water swirled around at the base of the cliff, washing away the softer rock and undermining the limestone which formed the heavy upper capping layers of rock. Left unsupported, pieces of



THIS PICTURE gives an excellent view of the hard upper capping rock at the crest of The Falls. When this "shot" was taken the men were preparing for blasting operations.



the limestone, in time, collapsed into the lower channel. These pieces of hard rock were used by the swirling water as a tool that helped to gouge out the underlying shale, forming in time a canyon. And so the Niagara river ate its way into the ancient sea-made rocks, and very gradually, the Niagara gorge was formed.

The Falls, first started at Queenston, have gradually "headed back" in this way to their present position at Niagara Falls, a distance of six or seven miles, or an average of between three and four feet a year. And it is quite possible, that thousands of years hence, if the same process is maintained, the cliff will be eaten away until it reaches and drains lake Erie. However, steps have already been taken to retard this erosive action. Hydro, which is represented on the international committee charged with the design and construction of remedial works in the Niagara river, has co-operated in the construction of a submerged weir above the rapids.

This weir marks the first step in a plan to arrest erosion, and it is designed to restore levels at the power plant intakes, and to compensate for the lowered levels caused by the diversions and, incidentally, to redistribute the water with consequent improvement in the scenic beauty of the American Falls.

At present, plans are being formulated for the construction of a weir on both the Canadian and American flank of The Falls. At the same time, excavations will be made to provide diversionary channels on both sides. These works are designed to redistribute the flow of water in such a way that the rate of erosion each year will be reduced appreciably.

Originally the Niagara river followed a northwesterly route towards St. Davids. In the course of time, however, glacial deposits in the vicinity of the whirlpool, combined with an increase in the flow of water, resulted in the river being diverted sharply in the present northeasterly course towards Lewiston.

### World's "Eighth Wonder"

Now a word about "mighty, majestic Niagara," whose water power on the Canadian side is harnessed by The Hydro-Electric Power Commission of Ontario to produce electrical energy for the citizens of Ontario, as well as providing the nerve centre of industry which, at the present time, is engaged largely in making tools of war.

This great waterfall, which is believed to have been in existence for some ten thousand years, is sometimes referred to as "The Eighth Wonder Of The World." It was first recorded by Father Louis Hennepin, a Belgian missionary and explorer, who accompanied the LaSalle expedition in 1678.

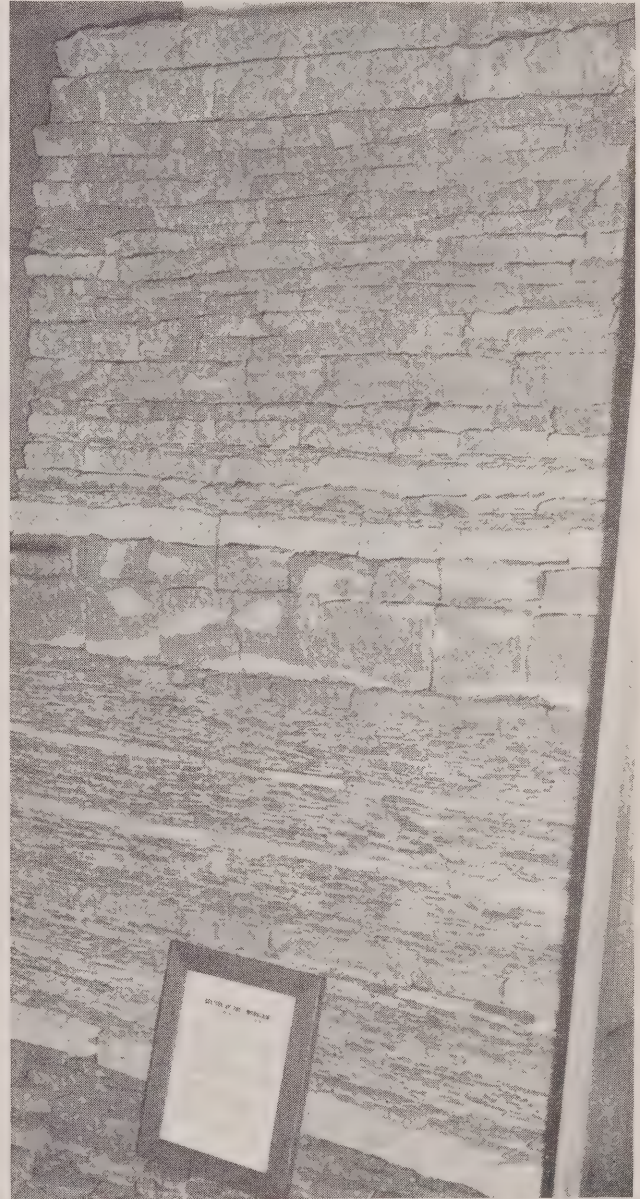
The cascade, one of the highest in the world, has been described in many ways, and anyone who sees it cannot help but feel a sense of awe as the great deluge of water tumbles and thunders furiously over the steep chasm, falling to the rocks below.

Besides its scenic grandeur, which attracts many thousands of visitors each year, and its fascinating geologic history, Niagara Falls has rendered a great service to the people of Canada and the United States. Nowhere else in the world is there such a large uniform flow and concen-

trated descent as on the Niagara river. These factors combine to make it an unrivalled source of water power, and its value is greatly enhanced by its proximity to densely populated areas and industrial sections.

When man harnessed Niagara's might for the generation of power, he also recognized the importance of preserving the aesthetic beauty of The Falls. Accordingly, in 1909-10, a treaty was signed between Canada and the United States limiting the amount of water that could be used for power developments. Prior to the war, the allowable diversion was not to exceed 56,000 cubic feet per second, of

*(Continued on page 23)*



THIS IS a section of the escarpment which extends across the province of Ontario from Queenston Heights to the Bruce Peninsula and is known as the "Niagara cuesta." The cuesta is due to the presence of hard layers of rock above and softer layers below.



# ⚡ AT ⚡ ETOBICOKE



HEAD OFFICE of the Etobicoke Hydro Electric Commission is located in this fine building on Dundas Street, Islington. On the right is the Kingsway substation.

ETOBICOKE Township, one of the most rapidly expanding municipalities on the outskirts of Toronto, joined the Hydro family of cost municipalities in January, 1918, when it signed its agreement with The Hydro-Electric Power Commission of Ontario for a supply of power for domestic and industrial needs.

Following the assumption by the Commission of the Interurban Electric Company's plant west of the Humber river, plans were immediately prepared for the re-building of the lines and their connection with systems in various parts of the township which had previously been built by the Commission and operated by adjoining municipalities. In all there were, in 1918, 38 miles of line serving approximately 600 customers, forming one of the most extensive township systems receiving power from the Commission.

The first meeting of the Etobicoke commission, which then comprised reeve James Dandridge, chairman E. H. French and Charles C. Grubb, commissioner, was held on July 19, 1918. Mr. French was appointed secretary pro-tem; W. J. Turner, a former assessor, was named secretary-treasurer and collector, and St. L. Canning, lineman.

Stephen Barrett, who is now treasurer of the municipality recalls the appointment of Mr. Turner. "He used to

go about the municipality reading the meters, and, right on the spot, he would make out the bill and then collect it," Mr. Barrett stated.

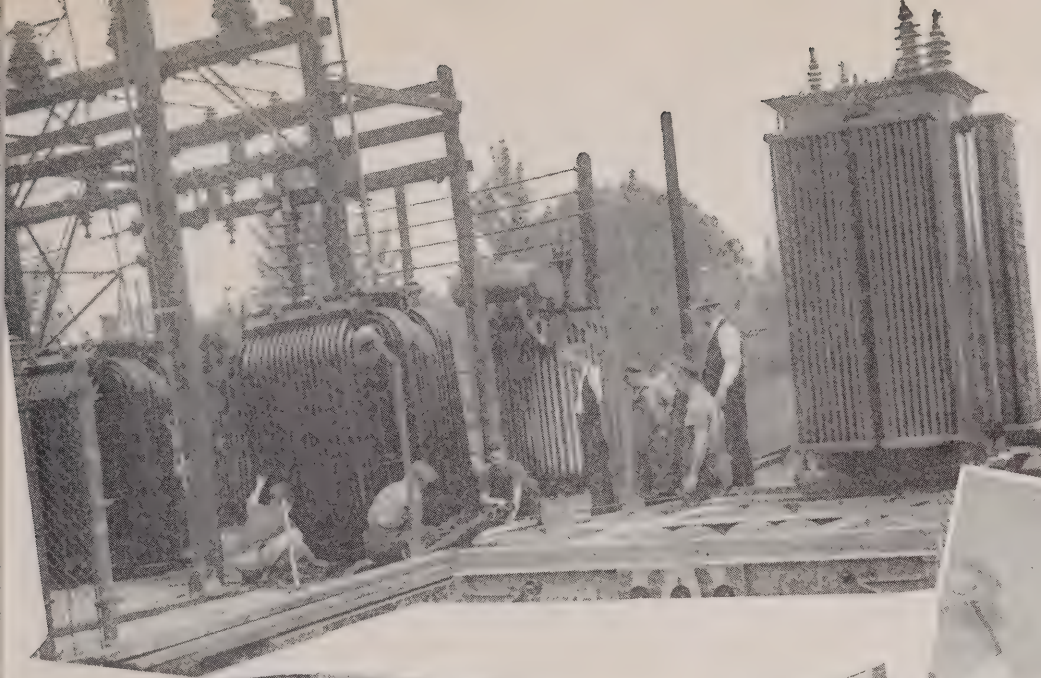
"I can also remember," he continued, "when the first street lights were erected in the township. A delegation from the Women's Institute appeared before council and agreed to pay half the cost of operating five lights on Dundas street. It was paid for the first year and after that the municipality assumed the entire cost," Mr. Barrett said.

The past decade has been one of phenomenal growth in the municipality. The records show that building permits issued for a single year have represented a total of approximately two million dollars and, on several occasions, building activity in the township has exceeded a million dollars annually. This has, of course, meant a corresponding increase in the number of customers served by the local Hydro commission.

When the first commission took over the operation of the system the load was approximately 600 horsepower, while to-day there are 103 miles of transmission lines carrying a load of approximately 8,875 horsepower, serving 5,869 domestic, 295 commercial and 40 industrial customers. In addition there are approximately 1,400 Hydro-owned and

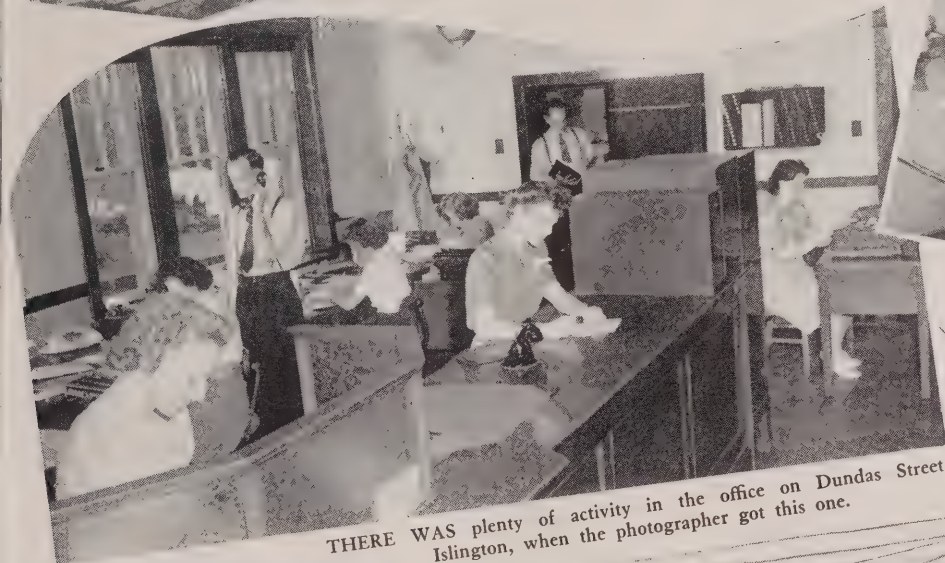
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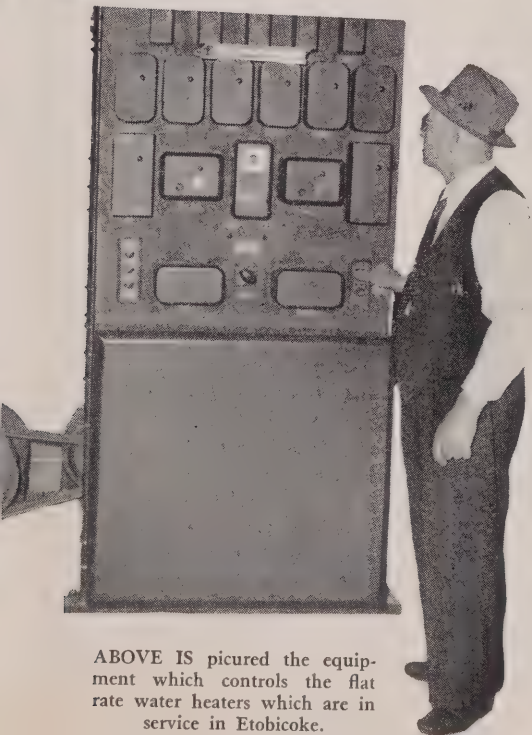
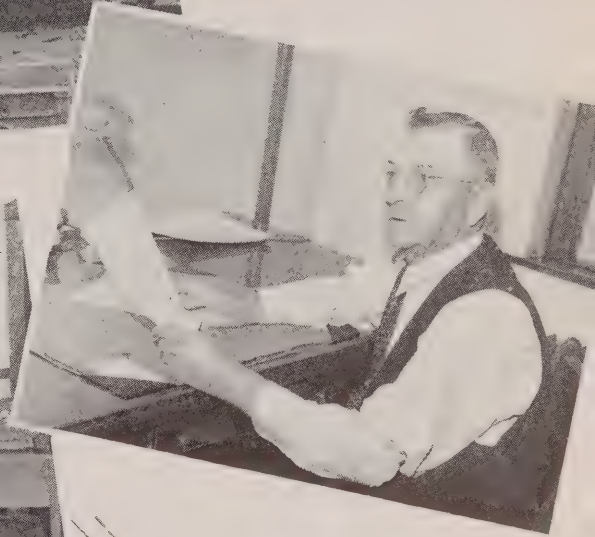


IT WAS a busy day in Etobicoke when the Hydro News photographer called and caught this H.E.P.C. construction gang winching a transformer onto a machinery moving truck.

BELOW IS Oscar Archambeau, superintendent, who has been with the Etobicoke commission for the past 21 years.



THERE WAS plenty of activity in the office on Dundas Street, Islington, when the photographer got this one.



ABOVE IS pictured the equipment which controls the flat rate water heaters which are in service in Etobicoke.



REPAIRS TO these pole transformers had just been completed by the line gang when this photograph was taken.



# A FOURTH UNIT FOR ALEXANDER



ADDING A fourth unit to the Alexander Landing generating station, pictured above, will increase the power resources of the Thunder Bay System by approximately 20,000 horsepower. The new unit is being installed to the right of the power house. A small corner of the headworks, which were constructed with the addition in view, can be seen projecting out from the upper right hand side of the station.

**D**IVERS are at work in the bed of the Nipigon river beside the Alexander generating station where a fourth unit is being installed to add some 20,000 horsepower to the plant's capacity.

The under-water job which these divers are doing is the sheeting and caulking of the timber crib cofferdam built to dewater the site in such a way that the new construction will not materially curtail the output of the existing units.

The dam extends from the end tail race pier of the present power house to a portion of the old cofferdam which was constructed when the original plant was built.

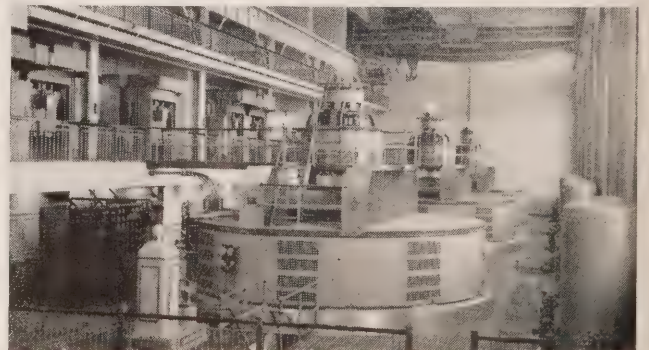
In order that the divers can do their work without being carried downstream by rushing water, the unit adjacent to the new dam has to be shut down for brief periods in the morning and evening.

When completed, the new cofferdam will permit the water to be pumped out from the area where the new unit will be installed, Dr. Otto Holden, the Commission's chief hydraulic engineer, told Hydro News. Because of engineering foresight, a concrete sealing strip had been placed around the outer periphery of the projected No. 4 unit cofferdam at the time when the original units were installed.

The first two units of the original Alexander plant were put into service in 1930 and the third unit came into operation the following year. Since that time, the growth in industrial load at Fort William and Port Arthur and the needs of the Steep Rock Iron Mine have made the installation of the fourth unit necessary. Not only will this new

unit supply the increased demand for power, but it will permit the more economical use of water in co-ordination with the other Commission plant, at Cameron Falls, which is located about a mile and one-quarter upstream from the Alexander plant.

The three existing units in the Alexander plant are operated from the Cameron Falls plant through the medium of supervisory control and remote metering equipment over an 86 pair telephone cable. These facilities will be extended



THIS IS an interior view of the Alexander Landing generating station. The fourth unit will be installed beyond the far wall seen in the picture.

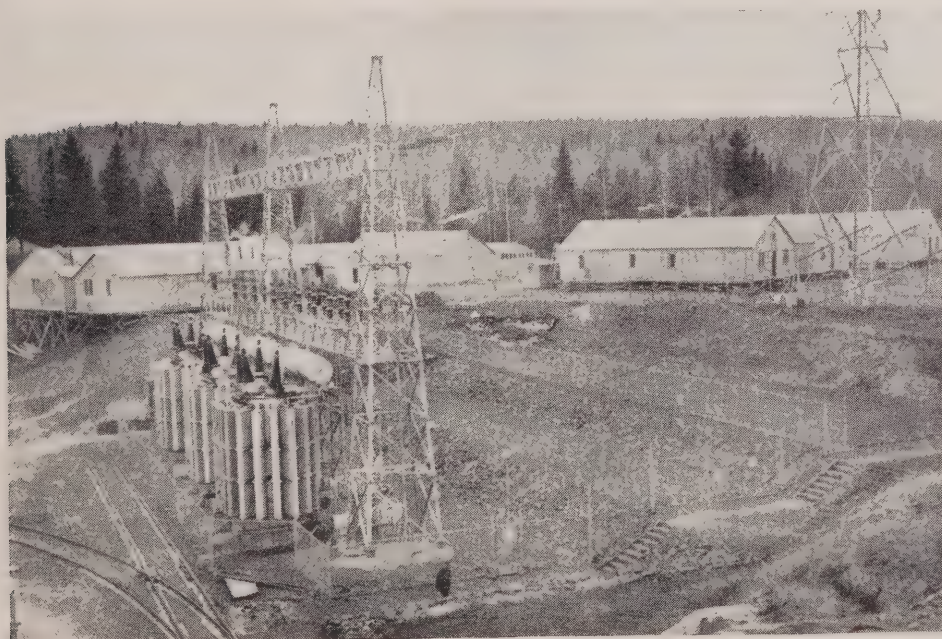


PREPARING THE diver Rod-  
erick "Roach" McDonald for a  
descent into the cold waters of  
the Nipigon river are tenders  
Tom Brown and Gordon Tap-  
lin. At the upper right hand  
corner of the picture can be  
seen the swirling water being  
discharged from the second  
unit. The third unit has been  
shut down and the barge is  
anchored where the discharge  
from this unit would ordinari-  
ly flow. The diver will apply  
the sheeting to the cofferdam  
so that the site of the excava-  
tion for the fourth unit can  
be dewatered.



to include the new No. 4 unit, and are additional to the usual local manual control and indicating equipment provided. Thus, the Alexander plant may be controlled either from its own control room or from Cameron Falls. The units are synchronized by means of an automatic synchronizer. The low voltage switching equipment for the fourth unit is of the metalclad type, similar to that for the existing units. The new turbine is to be of the propeller type and will have a somewhat higher speed than that of the other three units, which have Francis type runners.

Sand and coarse aggregate for the concrete have already been located within a mile of the job, on Hydro property. Timber for the construction of the new unit was cut in the nearby bush during the past winter and is now being made into lumber at a sawmill erected on the job. A construction camp, near the site, houses about 125 men, and each building is equipped with washing and toilet facilities. One interesting aspect of the manpower shortage, which is in evidence is that, for the first time, the Commission is using woman cookees on a construction job of this type.



COMFORTABLY HOUSED in  
a conveniently located camp,  
125 construction men are at  
work on the project. Com-  
mencing last winter, the men  
cut timber in the woods and  
brought it to the site where it  
is being manufactured into lum-  
ber for the construction work.  
Each of the huts shown in the  
picture has its own washing  
and sanitary facilities. For the  
first time, due to the manpower  
shortage, women cookees are  
serving at this camp.





A MOCK ORANGE bush is the centre of attraction in this picture taken outside the Atlas Avenue home of Armen Matheson who has a fine victory garden in the back. The ladies are Mrs. Esther Matheson (Mr. Matheson's mother), on the verandah; Miss E. M. Grader (left) and Mrs. Dorothy (Powell) Newham.



LESTER LOCKE was under way with a powerful offensive against weeds when the committee members arrived at his plot which is located on Nesbitt Drive, better known as the Governor's Bridge area. The stakes indicate that this gentleman has high hopes and that he will leave no stone or weed unturned to realize these hopes.

## Hydro Victory Gardeners

"Everything in the garden is lovely," was how H. R. Hill, one of the active members of the Hydro Victory Garden Committee summed up the situation following a tour of Hydro victory gardens in Toronto by committee members who were accompanied by Hydro News and a photographer. Most of these plots reveal the hard, untiring work which Hydro folk are putting into this vital and patriotic project. While it is not possible to portray in black and white pictures the interesting and colourful features of the various gardens, the camera shots reproduced on these two pages do give an impression of the way in which Hydro victory vegetables are growing.

A HAPPY HYDRO family scene was enacted on the plots at Dovercourt and Geary Avenue where J. H. McTavish and Frank Lear give members of the committee "the low-down" on how to be a successful farmer in the city. Mr. McTavish leans nonchalantly on a rake, while Mr. Lear (kneeling), tells the story to Mrs. Newham, Miss Grader, H. R. Hill and W. H. Carr.



LOOKS AS if a knotty problem were being discussed on this Whitehall Road plot (right) where victory gardener R. H. Starr takes time out to outline one of his "down-to-earth" principles. Mrs. Newham is apparently thinking the matter over before expressing her views.



THIS IS not a demonstration of the latest rhumba step which W. L. Amos (above), is giving for the benefit of Miss Grader, although he may feel that his fine garden at Whitehall Road justifies an impromptu victory polka. Mr. Amos had just negotiated a high barrier of potato plants when this picture was taken.

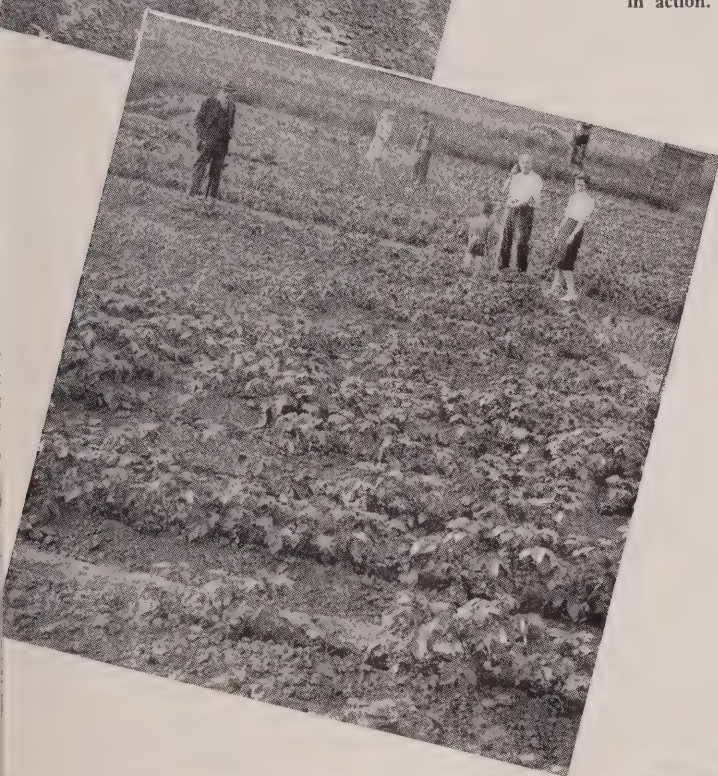




IF HARD work and a beautiful setting can assure a successful victory garden, Mabel "Brownie" Evans will be kept very busy when she comes to harvest her crops. Everything, so far, is going according to plan at this fine garden which is located on the Ard-wold Estate. Miss Evans is shown (left) in action.



THERE WERE many comments about the fine soil found at the victory garden of R. M. Thompson in the Governor's Bridge area (above). Mr. Thompson was at work on his potatoes when the members of the committee arrived at his plot. His Scottie dog was not altogether sure about extending a welcome to the visitors. He was more inclined to "put victory first" and leave social activities to another time.



ONE OF the largest Hydro victory gardens is to be found at Chiltern Hill Road in the vicinity of Warwick Avenue and Avenue Road in the Cedarvale section (left). Here the gardener is E. G. Gurnett who, with the advice of his young son, is doing a very fine job. This picture was taken when the members of the committee inspected Mr. Gurnett's plot.



ARMEN MATHESON and his father, Aris Matheson, have good reason to be proud of their Victory garden at the back of their home at 507 Atlas Avenue. For some weeks now they have been enjoying the fruits of their labours in the form of fresh vegetables served for dinners. An impression of his well-planned plot can be formed from this picture, showing the Mathesons at work.



# POST-WAR LOAD BUILDING

By L. S. TREUGE

The Windsor Utilities Commission, Hydro Division



L. S. TREUGE

**I**N the D Day invasion of the West-Walled coast of German-held France by the Allies, the world witnessed one of the most impressive demonstrations of what may be achieved by complete co-operation and co-ordination of effort.

In that demonstration is a lesson which should be taken seriously, and a pattern which should be followed in all post-war planning. The lesson, actually, is elementary. It means that any successful plan demands close co-operation and concerted effort if the objective is to be attained.

The onward march of Hydro in Ontario is, in itself, a striking example of what may be accomplished by co-operation and, as we look forward and plan for the future, this principle of working together is one that should be fostered and extended.

Hydro and the electrical industry have a big job to do in the post-war era—the kind of job that can best be done by co-operation and co-ordinated effort. When that time comes, and ample supplies of low-cost power are available, Hydro and the electrical industry will be in a position to bring many new benefits, in the way of electrical living, to the people of this province.

To accomplish this in the most effective way will require careful planning. In the first place, something might be done to effect a still closer co-ordination between provincial and municipal advertising to stress the reasonable cost of domestic equipment and to focus attention upon the second kilowatt-hour or “cooking and flat rate water heating rate.”

In addition, it seems to me, the successful progress of Ontario's great public ownership enterprise with its noteworthy record of rate reductions has never been sufficiently accentuated. The possibility of a continued downward trend in rates as public acceptance of complete domestic electrification increases is a theme which would strike a sympathetic note after the war when we expect to go forward into an era of progress unprecedented in the history of man.

## Surveys Conducted At Windsor

To come back to the question of rates, surveys conducted in Windsor established the fact that, in most cases, the first domestic rate block was consumed almost entirely in the operation of lights and smaller appliances. These surveys could be repeated in various localities and the story brought up to date. A province-wide programme of Commission advertising stressing the “cooking and flat rate water

heating rate” theme should be co-ordinated with municipal advertising. Whether or not a municipality is advertising in its local newspaper at present, it should be prepared to do so after the war. If such a municipality is not equipped to prepare copy locally, suitable material should be made available from the Commission. The effectiveness of this programme will depend entirely on the fact that the advertising of the Commission and the municipality is completely co-ordinated. Large extra advertising budgets are not wholly necessary though some increase might be desirable in certain cases. In this way it will be possible to cover the province and emphasize the desirability of electrical living. With this initiative emanating from Hydro there is no doubt that manufacturers and distributors of electrical appliances will find it to their advantage to devote a good sized portion of their advertising budget towards capitalizing on the receptiveness of the public. It should not be left to manufacturers and dealers to appreciate this fact. We should inform them of our own intentions and invite them to participate.

## For A Better “Tomorrow”

The billing records of any system will indicate which consumers are now using electric ranges and other appliances. Cards should be prepared listing all consumers whose kilowatt-hour consumption indicates that they do not use electric ranges. These are canvass cards. cursory examination of account records would indicate a rough credit status and the size of the meter or the service should indicate whether or not range wiring is installed. In municipalities operating a Hydro Shop this card system would be a prospect list. To this low consumption group the sales approach should be based on the “low cost range” and the “low second or cooking rate.” The feature of public ownership control, which has as its only object the improvement of service at decreasing rates, should be carefully explained. Such a range campaign could well be part of a much wider and more comprehensive plan of post-war load building. Undoubtedly, the needs of the times will demand an intensive and continuing programme to accelerate the arrival of that “electrical age” which is the promise of the future and one of the methods which will provide work and better and happier homes for those who are now fighting for these things.

Now is the time for Hydro, the manufacturer and the appliance distributor to begin that co-ordinated and painstaking planning which will ensure that all of our efforts will reach their maximum effectiveness through complete co-operation for a better tomorrow.

*This is the third article submitted by Mr. Treuge, in which he expresses his opinion on the subject of Post-War Load Building.*  
—The Editor.



## CONVOCATION CITATION EULOGIZES

## DR. HOLDEN'S SERVICE WITH HYDRO

Degree of Doctor of Engineering, Honoris Causa, Conferred  
Upon Commission's Chief Hydraulic Engineer  
By University of Toronto

**A**T the moment when the photograph on this page was taken, the capacity gathering in attendance at the University of Toronto convocation in Convocation Hall on June 8 saw Otto Holden receive the degree of Doctor of Engineering, honoris causa, from his alma mater. Dr. H. J. Cody, president and vice-chancellor of the university, can be seen extending congratulations as the hood is placed over Dr. Holden's shoulders.

The latter was presented by Dean C. R. Young of the Faculty of Applied Science, who said in his citation: "One of the reasons for the extraordinary output of the mechanisms and munitions of war in this province has been the availability of more than two and a half million horsepower of hydro-electric energy. Indeed, more than ninety per cent of the industry of Ontario is electrified. In bringing about this fortunate position, the engineer, whom I have the honour to present to you today, has had an important share."

Dean Young recalled that Dr. Holden, a native of Toronto, was an honour graduate of the University of Toronto in civil engineering, having received the degree of Bachelor

of Applied Science in 1913, and the professional degree of Civil Engineer in 1940, and that he had been associated with the Commission for the past thirty-one years.

As chief hydraulic engineer of the Commission, Dr. Holden had directed the construction of many important and specific developments, including Big Eddy, Barrett Chute and DeCew Falls, stated the speaker. The Long Lake and Ogoki diversions, which had particularly captured the public imagination, had also been designed and constructed under his direction.

Dr. Holden, continued Dean Young, was a member of the international committee charged with the design and construction of remedial works in the Niagara river, and he had been a collaborator on the design of the proposed St. Lawrence development works. At the same time, he was a member, and former councillor, of the Engineering Institute of Canada, a member of the American Society of Civil Engineers, vice-president of the Engineering Alumni Association of the University of Toronto, and had served as president of the Royal Canadian Institute during the past year.

Uniforms of all the fighting services, mortar-boards and gowns, symbolic of academic attainment, the colourful presence of feminine fashion and the more severe male attire were all in evidence at a recent convocation of the University of Toronto. A section of the gathering is shown in the above photograph, taken by H. M. Jackes of the Commission staff at the moment when Otto Holden, chief hydraulic engineer of The H.E.P.C., was receiving the degree of Doctor of Engineering.







## ON ETOBICOKE COMMISSION

**DR. VICTOR S. WILSON**, commissioner of Etobicoke Township Hydro-Electric Commission, was born at Beeton, Ontario, in 1897.



He received his early education in Walkerton, attended Humberside Collegiate, Toronto, and graduated from Toronto Normal School in 1917. Service with the 67th Battery in the First World War interrupted his education, but immediately after the war he resumed his studies, graduating from The Royal College of Dental Surgeons in 1923 with his Doctor of Dental Surgery degree.

Dr. Wilson is keenly interested in municipal affairs, having served on the Etobicoke commission since 1936, and during that time has been chairman for four years. From 1934 to 1936 he was school trustee for School Section No. 8.

His spare time is taken up with hunting, fishing and woodworking.

## RECONDITIONED TRANSFORMERS

There are a number of reconditioned and tested distribution transformers available at the Bloor Street yards of The H.E.P.C., according to David Forgan, the Commission's construction engineer.

These transformers, he stated, are 60-cycle units (2,200 to 220-110 volts) and range in size from 5 kv-a to 25 kv-a. Quotations will be submitted on request.

## LEGION DRAW WINNERS ANNOUNCED

Funds used to provide comforts for associate members overseas received a boost as a result of the draw conducted by the Ontario Hydro Branch of the Canadian Legion. First prize, a painting by Harry Leeming of the Commission staff, was won by G. L. Gibson of the electrical inspection department, while the other prize winners were: D. F. Orr, accounting; P. Leland, administration building; W. C. Cale, laboratory; and A. Don Carlos, operating, Burlington.

## Get Fuel, Check Furnace Pipes Advises Hydro Heating Expert

**P**RETTY hot these days! Even so, we must do some serious thinking right now about the time when the mercury will again tumble down below zero.

The government says so.

Better take a look at your coal bin, says Ottawa, and get an adequate supply of fuel in now or you may be out of luck later on.

And S. L. Fear, Hydro's heating expert, says, now is the time to get on the "soot suit" and take a peak in your furnace pipes. You may find a few gremlins who are determined to make things difficult for you.

"It's like this," Mr. Fear says, "due to the fuel shortage the average householder has been burning an inferior type of fuel usually mixed with his regular fuel. This may have resulted in an unusual accumulation of soot in the chimney and in the interior of his furnace."

"If the best possible results are to be obtained from the fuel you will burn next winter, better clean out this soot carefully," says Mr. Fear.

"Help is becoming increasingly harder to get, and if you need your chimney swept, or your furnace should need repairing, get your order in now, or you may be cold when the fall winds blow," he warned.

A great deal of heat escapes through walls, ceilings, doors, and windows. If there are many windows in the house, storm windows or weather stripping may be the first step in solving the heating problem and saving yourself money in fuel bills.

Home owners who are skilful with their hands can insulate their own attic floor, provided it is unfinished and has open beams. Pack the insulating material snugly between the rafters, leaving no open spaces. There is one note of warning which must be carefully heeded: if you don't want to find yourself suddenly sitting on the floor of the room below, smothered in lath and plaster, be careful not to step between the beams.

## WINS TWO GOLF EVENTS

Ken Brown of the sales promotion department of The H.E.P.C., has just added to his golfing honours by winning the Hamilton Electric Appliance Club annual tournament trophy, and the Niagara District Electric Club event. His net scores are reported to have been 74 and 75 respectively.

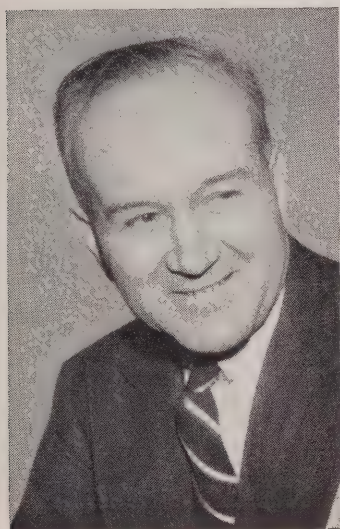




## APPOINTMENT ANNOUNCED

**A**PPOINTMENT of W. ROSS STRIKE of Bowmanville as the third member of The Hydro-Electric Power Commission of Ontario was officially announced by Prime Minister George A. Drew

on June 16. The other members of the Commission are Dr. Thomas H. Hogg, chairman and chief engineer, and Hon. George H. Challies.



Widely known in Hydro circles throughout the province, Mr. Strike is chairman of the Bowmanville Public Utilities Commission and president of the Ontario Municipal Electric Association. To his new and responsible position, he brings an intimate knowledge of Hydro affairs acquired as a member of his local

commission and as an executive officer of the O.M.E.A.

Mr. Strike was mayor of Bowmanville from 1933 until 1937 inclusive, and has been a member of the Bowmanville commission for the past eleven years. In 1935, he was elected president of the Eastern Ontario Municipal Electric Association and, at the last annual meeting of the parent body, he succeeded Kenneth A. Christie, K.C., as president.

Born in Prince Edward County in 1895, he was reared in the august atmosphere of the parsonage and educated in public and high schools in Eastern Ontario, where his father occupied a number of town pulpits. In 1914, Mr. Strike was articled in law but the outbreak of war interrupted his career temporarily. During his three years' active service in France he was wounded twice and was awarded the French Medaille Militaire at Vimy Ridge. After the war was over, Mr. Strike continued his study of law and graduated from Osgoode Hall in the Veterans' Class of 1920. He started practising with Tilley and Company in Toronto and, later, practised in Perth and Bowmanville.

Possessing a friendly, pleasing personality, Mr. Strike is of tall and athletic build. While he does not boast about his skill on the golf course, he is known to be keenly interested in the Royal and Ancient game.

## ETOBICOKE CHAIRMAN

**GEORGE T. TROWHILL**, chairman of Etobicoke Township Hydro-Electric Commission, has served on the commission since 1938.

He was born in Clinton, Ontario, in 1890, and attended public, high school and business college in Clinton and St. Thomas.

Mr. Trowhill is superintendent of traffic, Canadian National Telegraphs. He is also technical adviser to the R.C.A.F. on Aircraft Detection Corps Communications.

He is particularly active in municipal affairs, but finds time to get in some radio research, woodworking and lawn bowling.



## COMMISSIONER BUTLER

Reeve **FRANKLIN A. C. BUTLER**, has served as commissioner on Etobicoke Township Hydro-Electric Commission for the past three years.

Born in Toronto in 1902, he attended public and secondary schools in the city. On the completion of his studies at The Canadian School of Embalming and Funeral Directing, he set up business in Islington.

Being very active in municipal affairs, Mr. Butler was elected councillor in 1939, and held that position until he became reeve in 1943.

While at school he played rugby and hockey, and now his interests lie in all organized sports. He is also active in service club work.



## REPORTED MISSING

Three former H.E.P.C. operators-in-training, all of the R.C.A.F., have been reported missing. They are:

Flight Lieut. **ANDREW C. HARDING**, D.F.C., who was stationed at Chats Falls, joined the Commission's staff in September, 1940, and enlisted in May, 1941.

**THOMAS R. MARTIN** joined the staff at Strachan avenue in May, 1940, and enlisted in July, 1941.

**A. CHARLES KILSBY**, formerly at Bridgman station, was with the Commission from May, 1941 to October, 1942.



# LOW-COST POWER SEEN AS BASIC FACTOR IN ECONOMIC DEVELOPMENT OF DOMINION

Part Of Mining Industry In Post-War Era Stressed By Dr. Thomas H. Hogg—Hydro Chairman,  
Accompanied By Hon. George H. Challies Attends Presentation Of  
Safety Award To Omega Gold Mines Limited.

**C**ONTINUED provision of ample supplies of low-cost power is one of the basic factors which will give impetus to the economic growth and prosperity of Canada in the post-war era.

This observation was made by Dr. Thomas H. Hogg, chairman and chief engineer of The Hydro-Electric Power Commission of Ontario, when speaking at Larder Lake, Ontario, upon the occasion of the presentation of the John T. Ryan safety trophy to the Omega Gold Mines Limited.

He remarked that it might not be out of place to say that the record of the phenomenal growth which occurred in Northern Ontario between 1930 and 1940 had been a tribute to the soundness of the policies followed by Hydro in behalf of the government in connection with the Northern Ontario Properties.

## Hydro Stimulated Activity

Dr. Hogg, who was accompanied by his fellow commissioner Hon. George H. Challies, said that the visit would enable them to obtain some first-hand knowledge of the important developments that had taken place in recent years.

Some, he continued, would remember that the first contract for Hydro power in that area had been made with

the Omega Gold Mines and dated from August, 1935. Following the signing of that contract, the Commission had proceeded immediately to construct a transmission line extension from Kirkland lake, a distance of some 25 miles, power having been first delivered in December, 1935. The possibility of getting Hydro power, he stated, had stimulated further activities, both east and west of Omega, and there were now several encouraging ventures to which power was being supplied.

"In Northern Ontario," proceeded the Hydro chairman, "existing communities are almost entirely dependent upon the mines. It was not possible, therefore, to develop in Northern Ontario co-operative Hydro systems such as exist in Southern Ontario. As a result, the publicly-owned Hydro properties of Northern Ontario are held by the Commission in trust for the province and are operated upon the financial responsibility of the government. Nevertheless, although Hydro in Northern Ontario is not a co-operative enterprise supplying power at cost as it is in Southern Ontario, it is not operated for the purpose of supplying a profit for the government. Its purpose is to encourage the mining industry in Northern Ontario and

*(Continued on next page)*

**THIS GROUP** lined up outside the home of Frank O'Connell, manager of the Omega Gold Mines Limited, at Larder Lake, Ont. From left to right, they are: L. T. Postle, manager, Chesterville Larder Lake Gold Mining Co., Ltd.; H. C. Rickaby, deputy minister of mines for Ontario; Frank O'Connell; Hon. George H. Challies, vice-chairman of The H.E.P.C.; Mrs. Frank O'Connell; Hon. Charles Daley, minister of labour for Ontario; Arthur Cavanagh, chairman and general manager, Temiskaming and Northern Ontario Railway Commission; M. F. Fairlie, consulting engineer; William Row, manager, Kerr Addison Gold Mines Ltd.; Dr. Thomas H. Hogg, chairman and chief engineer, H.E.P.C.; George Peppall, solid fuel controller for Ontario; and the O'Connell children in front.





# Backing the Attack



THIS interesting display of knitted and sewn articles gives some idea of the activity and versatility of the ladies' auxiliary of the Toronto Hydro-Electric Club. The illustration shows quilts, afghans, girls' dresses made from men's shirts, children's slippers from old felt hats, bootees, socks, sweaters and other useful items. These are sent to the Red Cross Society; Salvation Army; Imperial Order of the Daughters of the Empire and other organizations, which, in turn, distribute them among war victims. The edible parcels help fill ditty bags for the Navy League and boxes for the boys overseas. In the upper right hand corner are executive committee members, top row, left to right, Eileen Gibson, parcelling committee; Phoebe M. Ross, Navy League representative; Viola Thompson, sewing convener; second row, (left) Margaret Larrington, secretary; and Mabel Heaton, vice-chairman. Other committee members are: Minnie Jones, chairman; Edith Totten, secretary-treasurer; Rona Hickey, parcelling committee; Mary Ross and Nan Thompson, wool committee; Jessie Robertson, troupe entertainment; and Margaret Troughton, work room.

## LOW-COST POWER

(Continued from page 18)

the development of new properties by providing ample supplies of electrical power at a stabilized low cost."

Dr. Hogg stated that the many improvements in machinery designed for the mass handling of large quantities of earth and rock in connection with highway construction and the construction of great public works, such as hydro-electrical developments and irrigation projects, had been very successfully applied to the development of mining machinery capable of handling large quantities of rock and ore in an economical way. But, he pointed out, that improved machinery could not be profitably utilized unless large supplies of power at low rates could be provided.

"In the Province of Ontario," continued the Hydro chairman, "Hydro power has been called upon to perform a great task. Never once in the four and a half years of war has it failed to provide power in sufficient quantities to keep the war industries working at top speed.

"For the time being, mining operations in Northern Ontario, due chiefly to the problem of obtaining sufficient labour and supplies, are temporarily in eclipse. In the post-war period, however, it is confidently anticipated that

the mining districts of Northern Ontario will again have a large part to play in the forward progress of the province."

At another point, the Hydro chairman commented on how electricity had greatly reduced the hazards of mining. From the dim glow of the miner's lamp the well illuminated levels and working surfaces of present day mines, was a big step forward in safety, he stated. Hydro, too, in its daily operations, he pointed out, was giving constant attention to the question of safety.

During the past year, when Canada's metal mining industry produced some \$400,000,000 worth of metals, the best safety record in the Dominion was established for the second year in succession by the half-mile deep Omega Gold Mines at Larder lake, with one compensation accident for 160 men.

In the presence of mine and government officials, and miners and their families, Hon. Charles Daley, minister of labour for Ontario, presented the John T. Ryan Trophy to A. D. Campbell, manager of the Omega Gold Mines Limited. Of bronze and marble and showing the figure of a stalwart miner and two children, this handsome trophy is awarded under the direction of the Canadian Institute of Mining and Metallurgy.





**I**T'S better to be safe than sorry. This is an old but true saying, and during the canning season you will save time, money, energy, and good food if you will follow that advice. Because the preservation of food, even in the home kitchen, is a scientific process, you can never take chances anywhere along the line. But if your canning is done with care, and according to approved methods, there is little danger of failure.

There are several ways in which these principles may be applied. Canning in airtight jars or cans is one way; drying is another, and freezing is a third and more modern way. You can also preserve some foods by salting, and some can be kept by pickling in vinegar. Cooking combinations of fruits, according to their acid and pectin content to a jam or jelly consistency, also preserves fruits.

Canning in airtight jars or cans is the most widely used method for preserving fruits and vegetables. So, this month, we offer a few suggestions which, if observed, will assure "safe" results. If you keep these points in mind, and follow reliable recipes and detailed instructions, you need never be sorry about your canning.

### Rules for Canning Success

To sum up good canning principles we may repeat these points:

1. Can only fresh food, in perfect condition.
2. Have food, jars and everything used for canning thoroughly clean.
3. Work quickly, so as to can "freshness."
4. Heat food hot enough and long enough to make bacteria and other organisms harmless, so they will not "work" in the food and make it spoil.
5. Follow up-to-date instructions and time tables, backed by scientific research.
6. Make sure jars are sealed airtight to keep out air which causes growth of moulds.
7. Store canned food in a cool, dark place.
8. Do not use any strong-flavoured vinegar or brown sugar syrup for sweetening. You may use one-third mild-flavoured honey or corn syrup to replace some of the sugar.
9. Remember, it is possible to can without sugar, but some sugar does help to hold shape, colour and flavour of fruits.
10. For all water-bath canning have the water hot in the "canner" when you put the jars in. Count the time from the minute the water begins to boil. Have the water two inches over the top of the jars. Add more HOT water if it boils away.
11. When you take the jars out of the water-bath or pressure cooker, complete the seal at once, being careful to hold the glass top while you tighten the screw or spring top. Cool them right end up but do not place in a draft.

### Wartime Jams and Jellies

Fruits should have a sufficient amount of both pectin and acid to make a good jelly product. Study the following directions:

1. Fruits which have sufficient pectin and sufficient acid are—sour apples, currants, gooseberries, grapes, tart plums and cranberries.
2. Fruits which have sufficient pectin but low in acid are—crabapples, blueberries, sweet plums, quinces, and raspberries.
3. Fruits which have sufficient acid but low in pectin are—sour cherries.
4. Fruits which are low in pectin and acid are—elderberries, pears, pineapple and strawberries.
5. Fruits which are not good for jelly but good for jam are—apricots, peaches, plums, and strawberries.

**Note:** Use a mixture of 1 cup ripe fruit to 2 cups under-ripe to give pectin to low-pectin fruits.

Add  $\frac{1}{4}$  cup lemon juice to each quart of raw blueberries, raspberries, and crabapples to increase the acid properties of these fruits.

Add  $\frac{1}{2}$  cup lemon juice to each quart of raw plums, quinces and strawberries to increase the acid necessary to jel the fruit. Instead of adding lemon juice, these fruits may be used in combination with tart fruits, e.g. blueberry with rhubarb; raspberry with red currant; strawberry with gooseberry.

### Directions

To prepare fruit for making jelly: Wash and remove stems and blemishes. Do not peel or core. Cook no more than three to four quarts of fruit at a time. Make your measurements accurate and follow recipes exactly.

Put fruit in saucepan and add the following recommended quantities of water for the fruits which are being used:

1. Add 1 cup water to 1 qt. soft fruit (raspberries, grapes and blueberries).
2. Add 2 cups water to 1 qt. medium fruit (currants, gooseberries and plums).
3. Add 4 cups water to 1 qt. crabapples.
4. Add 8 cups water to 1 qt. quinces.

Heat fruit slowly to simmering point. Do not boil. Cook until soft and mushy. Put in a clean cotton bag to drain. Let drip into a large container. It may be gently squeezed by pressing with 2 wooden spoons.

With fruits such as currants, crabapples and gooseberries two extractions of juice may be made. Measure the pulp in the bag and add an equal amount of water. Cook in saucepan for 20 minutes. Extract again.

For excellent flavour add  $\frac{3}{4}$  cup sugar for each cup of juice. It is safer to use too little sugar than too much. Boil constantly and test for jelling point.

The tested method requires correct observations. Lift a spoonful of the cooking liquid and allow it to drip slowly from the edge of the spoon. As the liquid nears the jelling stage it will form two distinct straight-edge drops. Test repeatedly. When the two drops tend to pull together the jelly is done. Remove from electric element at once.

Have containers sterilized and hot when filling with hot jelly or jam.

Cool and seal with paraffin. Cover with metal lid or heavy paper to prevent wax from cracking.



1200  
YEARS  
BEFORE  
HYDRO



**D**URING the ninth century, venturesome Vikings set forth in their frail craft, braved the treacherous North Sea, to raid England, Ireland and Scotland, and penetrated even as far as the New World. They became so daring that they had practically girdled the then-known Christian world.

Before embarking upon a piratical raid, the ship's crew were feasted by the townsfolk, and their return, months later, with the spoils of conquest, signalled an occasion for another feast, lasting far into the night.

Without electricity to light up their festivities at the touch of a switch, they were forced to resort to what must have been a rather odoriferous method of illumination. Long pine splinters, saturated with fish oil and mounted on long iron stems, were thrust into the earthen floor of the feasting hall and lighted.

The accompanying illustration is an artist's impression of a Viking feast.



**I**LLUSTRATED above are some of the prize winning exhibits in the Annual Iris Show conducted recently by the horticultural section of the Ontario Hydro-Electric Club. At the right is shown the "best" iris in the show, exhibited by Major J. C. Murton, who also won seven "firsts" and seven "seconds." Other prize winners were: J. F. MacLaren, four "firsts" and two "seconds"; N. S. Haines, one "first" and two "seconds"; Miss Tessa MacPherson, H. E. Brandon and A. G. Lang, one "first" each; W. H. Carr, H. R. Hill and H. H. Leeming, one "second" each. Approximately \$70 for the Consolidated War Services Fund has been realized on draw tickets sold on the flowers.





**D**R. THOMAS H. HOGG, chairman and chief engineer of The Hydro-Electric Power Commission of Ontario, has received the following note from Lieutenant-General H. D. G. Crerar, Commander-in-Chief of the Canadian Army overseas:

"It was thoughtful of you to send me the Hydro News of May, and the article concerning me brought many enjoyable memories of thirty or more, years ago, and of my friends who formed the group in the photograph.

"I hope that an opportunity to see you, and them, again will not be delayed much longer."

This next letter, which speaks for itself, was written by a rural Hydro consumer who is served by the Napanee Public Utilities Commission:

"I take pleasure in sending you cheque for \$47.47 in settlement of the enclosed bill. I said 'pleasure' for seldom, if ever, have I paid a bill so cheerfully. The Hydro has already been a lifesaver to us. We were just about fagged out milking so many cows by hand. Now we have an electric milker. Your current has also cleaned up our seed grain, to the great satisfaction of the undersigned's bones and muscles. My sincere thanks to Mr. Walters for speeding up the installation."

## AT ETOBICOKE

(Continued from page 8)

220 consumer-owned flat rate water heaters in operation with an average of 550 watts per customer.

A large majority of these flat rate water heaters are automatically controlled from the Islington substation. When the contacts on the time clock close, a frequency signal is sent out over the controlled area of the distribution system and is picked up by a tuned relay located in the customer's home. The relay, in turn, cuts off the supply of power to the heaters. When the peak period has passed, the signal again goes out over the system and the heaters are turned on once more.

The local commission's outstanding debentures debt at the end of 1943 was \$52,214, the final payment being scheduled for December 1, 1950. No debentures have been issued by the commission since 1930. Between 1933 and 1943 the debt has been reduced by \$133,221.

## Origin Of Name

The origin of the name Etobicoke is somewhat obscure but it is now generally accepted that it comes from the Indian tongue and means the river with the shining bottom. On some early maps the river is called "Toby Cook" but, since there is no record, either in history or in tradition, of a man by that name, it is believed that the early map makers garbled the Indian pronunciation of the name.

The early settlers of the township were United Empire Loyalists who hewed a home out of the wilderness.

One of the earliest Crown grants was that given to a Colonel Smith, a half-pay retired officer of the Queen's Rangers, which is now the York County Regiment. An old history book of York County recounts that he was president of Upper Canada.

Another official who had occasion to follow what was then known as the Lake Shore road to Toronto, complained very bitterly of the condition of this road after he had lost his way and only found the path leading to Toronto by giving his horse his head. This official pointed out that land granted to half-pay officers, who could not afford to hire help to improve the land, was wasted.

For the most part Etobicoke is a garden and residential suburb of Toronto. There are, however, eight industries located within its borders. They are: The Canadian Scale Company, Ingraham Clock Company, Mattison-Hart Company, National Silicates, Northern Pigment Company, Pli-Brick Company, The Wickman Company, and the Aluminum Company of Canada.

The area is served by five Hydro substations, the largest of which is located on Islington Avenue. All are owned by the H.E.P.C. and supervised by the local commission.

The citizens of the township have co-operated in conserving electric power for war industry, but it is impossible to accurately estimate the amount of the saving because of the growth in load since the war began.

Members of the Etobicoke commission at present are: G. T. Trowhill, chairman; Dr. V. S. Wilson and reeve F. A. C. Butler, while J. Clare Johnston is manager and secretary-treasurer.

## STRANGE—BUT TRUE

**I**F they were to take a look at the 1908 traffic laws for the State of Nebraska, present-day motorists would be surprised to read the following clauses governing the conduct of persons driving automobiles in that State at that time:

Clause 1: On discovering an approaching team, the automobilist must stop offside and cover his machine with a tarpaulin painted to correspond with the scenery.

Clause 2: In case a horse will not pass an automobile, notwithstanding the scenic tarpaulin, the automobilist will take his machine apart as rapidly as possible and conceal the parts in the grass.

Clause 3: Automobiles running on the country roads at night must send up a red rocket every mile and wait ten minutes for the road to clear.

Clause 4: They may then proceed carefully, blowing their horns and shooting Roman candles.

These injunctions may have proved rather discouraging to the would-be motorists of 1908 in Nebraska. After one week of these highway commando operations, some of them probably asked for boots and saddles again.



## Load Summary Presentation

**A** MALGAMATION of three systems into one has necessitated a change in the presentation of the monthly load summary which is given on the chart in the next column.

This fact was announced by Dr. Thomas H. Hogg, chairman and chief engineer of the Commission, who stated that the maximum twenty-minute peak load for the former Niagara, Eastern Ontario and Georgian Bay Systems had been given and the sum of these figures used to determine the maximum twenty-minute peak for all three.

Dr. Hogg pointed out that, under amalgamation, the Southern Ontario system maximum twenty-minute peak becomes the maximum twenty-minute coincident peak of the Niagara, Eastern Ontario and Georgian Bay divisions. He explained that, due to diversity in the time at which maximum demands occur in the three divisions, the coincident peak for the Southern Ontario system is less than the sum of the individual division peaks.

These facts, he said, should be noted in making any comparison of figures now released with those previously released. Figures for 1943 in the accompanying chart have been revised in accordance with the new set-up.

The monthly load summary for May, 1944, shows that the total primary power load demand on the Southern Ontario and Thunder Bay systems and Northern Ontario Properties exceeded that for the corresponding month last year by approximately 60,000 horsepower or 2.7 per cent.

The complete primary and primary and secondary load tabulations for May are shown on the chart.

### LOWLY PIONEERS

(Continued from page 7)

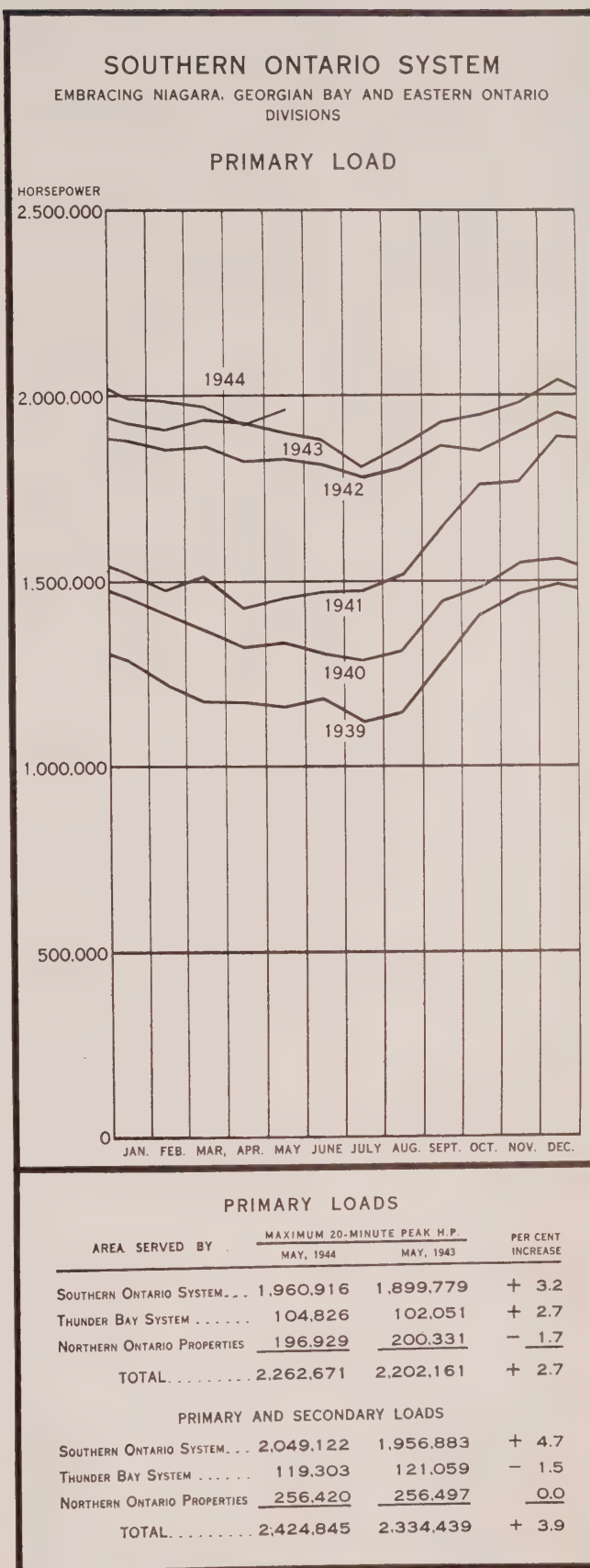
which 36,000 was allocated to Canada. The average discharge of the river is approximately 200,000 cubic feet per second.

A temporary agreement was made between the Canadian and American governments in 1940 to authorize the use of additional water to provide further supplies of much-needed power for war industries in both countries.

The installed capacity on the Canadian side of the river is approximately 900,000 horsepower, and that on the American side, 550,000 horsepower.

The crest length of the Canadian or Horseshoe Falls measures 2,600 feet and it rises to a height of about 162 feet. The American Falls has a crest length of 1,000 feet and stands about 167 feet high. Goat Island separates the two falls, and between them is the lovely Bridal Veil.

And so the next time you stand and gaze at Nature's magnificent masterpiece at Niagara, give a thought to these lowly pioneers—the shellfish and sponges—which established their homes there many million years ago.



## MUNICIPAL LOADS, APRIL, 1944

## SOUTHERN ONTARIO SYSTEM

SOUTHERN ONTARIO SYSTEM			Popula- tion		Popula- tion			
NIAGARA DIVISION (25-Cycle)			H.P.		H.P.			
	Popula- tion		Erieau -----	107	281	Oil Springs -----	178	541
			Erie Beach -----	8	21	Otterville -----	87	P.V.
			Essex -----	591	1,886			
			Etobicoke Twp. -----	7,797	V.A.			
			Exeter -----	679	1,654	Palmerston -----	565	1,400
Acton -----	1,610	1,903				Paris -----	1,986	4,604
Agincourt -----	173	P.V.	Fergus -----	1,227	2,759	Parkhill -----	168	1,029
Ailsa Craig -----	125	487	Fonthill -----	160	860	Petrolia -----	959	2,768
Alvinston -----	105	649	Forest -----	518	1,562	Plattsville -----	139	P.V.
Amherstburg -----	937	2,704	Forest Hill -----	6,596	12,172	Point Edward -----	1,744	1,199
Ancaster Twp. -----	365	V.A.				Port Colborne -----	2,433	6,928
Arkona -----	63	403	Galt -----	11,617	15,126	Port Credit -----	918	1,934
Aurora -----	1,268	2,821	Georgetown -----	1,689	2,452	Port Dalhousie -----	829	1,599
Aylmer -----	807	1,985	Glencoe -----	182	763	Port Dover -----	427	1,790
Ayr -----	160	760	Goderich -----	1,528	4,674	Port Rowan -----	108	700
			Granton -----	65	P.V.	Port Stanley -----	312	824
Baden -----	543	P.V.	Grimsby -----	788	1,988	Preston -----	4,245	6,656
Beachville -----	818	P.V.	Guelph -----	11,792	23,074	Princeton -----	128	P.V.
Beamsville -----	415	1,227						
Belle River -----	160	836	Hagersville -----	712	1,524			
Blenheim -----	501	1,873	* Hamilton -----	158,779	164,719	Queenston -----	95	P.V.
Blyth -----	106	662	Harriston -----	475	1,292			
Bolton -----	200	629	Harrow -----	498	1,092			
Bothwell -----	122	683	Hensall -----	179	686	Richmond Hill ---	439	1,295
Brampton -----	2,601	6,157	Hespeler -----	2,890	2,938	Ridgetown -----	589	1,986
Brantford -----	23,047	31,622	Highgate -----	110	322	Riverside -----	1,158	5,235
Brantford Twp. -----	996	V.A.	Humberstone -----	548	2,831	Rockwood -----	102	P.V.
Bridgeport -----	140	P.V.				Rodney -----	134	758
Brigden -----	88	P.V.	Ingersoll -----	3,501	5,757			
Brussels -----	138	784						
Burford -----	216	P.V.	Jarvis -----	182	513	* St. Catharines ---	29,532	34,541
Burgessville -----	46	P.V.				St. Clair Beach ---	76	138
Burlington -----	1,551	3,925	Kingsville -----	536	2,453	St. George -----	158	P.V.
Burlington Beach ---	410	1,474	Kitchener -----	27,807	35,456	St. Jacobs -----	305	P.V.
						St. Marys -----	1,520	4,009
Caledonia -----	344	1,430	Lambeth -----	138	P.V.	St. Thomas -----	8,092	17,045
Campbellville -----	35	P.V.	LaSalle -----	228	907	Sarnia -----	11,506	18,599
Cayuga -----	119	700	Leamington -----	1,498	6,048	Scarborough Twp. ---	4,289	V.A.
Chatham -----	7,077	17,184	Listowel -----	1,426	2,984	Seaforth -----	884	1,782
Chippawa -----	334	1,228	London -----	40,561	77,105	Simcoe -----	2,624	6,340
Clifford -----	109	491	London Twp. -----	586	V.A.	Smithville -----	157	P.V.
Clinton -----	597	1,879	Long Branch -----	1,200	4,258	Springfield -----	61	382
Comber -----	134	P.V.	Lucan -----	181	643	Stamford Twp. -----	2,630	8,275
Cottam -----	71	P.V.	Lynden -----	121	P.V.	Stoney Creek -----	229	933
Courtright -----	45	355				Stouffville -----	254	1,198
			Markham -----	319	1,175	Stratford -----	7,257	17,163
Dashwood -----	91	P.V.	Merlin -----	83	P.V.	Strathroy -----	1,547	2,834
Delaware -----	65	P.V.	Merritton -----	11,654	2,916	Streetsville -----	209	701
Delhi -----	422	2,430	Milton -----	1,328	1,915	Sutton -----	168	949
Dorchester -----	97	P.V.	Milverton -----	384	994	Swansea -----	3,146	6,907
Drayton -----	117	528	Mimico -----	2,737	8,354			
Dresden -----	436	1,525	Mitchell -----	736	1,670	Tavistock -----	638	1,080
Drumbo -----	88	P.V.	Moorefield -----	53	P.V.	Tecumseh -----	282	2,331
Dublin -----	43	P.V.	Mount Brydges -----	101	P.V.	Thamesford -----	206	P.V.
Dundas -----	2,938	5,245				Thamesville -----	166	816
Dunnville -----	1,318	3,916	Newbury -----	33	288	Thedford -----	90	598
Dutton -----	254	830	New Hamburg -----	616	1,441	Thorndale -----	72	P.V.
			Newmarket -----	1,757	3,800	Thorold -----	2,548	5,284
East York Twp. -----	8,446	41,578	New Toronto -----	11,907	9,469	Tilbury -----	1,512	1,923
Elmira -----	1,281	2,069	Niagara Falls -----	10,378	20,371	Tillsonburg -----	1,415	4,602
Elora -----	444	1,185	Niagara-on-the-Lake -----	668	1,764	Toronto -----	342,975	657,612
Embro -----	183	420	North York Twp. ---	9,820	V.A.	Toronto Twp. -----	2,818	V.A.
			Norwich -----	397	1,301			

\* Industrial load 66 2/3 Cycle.



## MUNICIPAL LOADS, APRIL, 1944

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion	
Wallaceburg -----	4,199	4,802	Neustadt -----	46	431	Lakefield -----	425	1,301	
Wardsville -----	38	221	Orangeville -----	652	2,558	Lanark -----	76	686	
Waterdown -----	230	867	Owen Sound -----	5,763	13,559	Lancaster -----	40	570	
Waterford -----	436	1,294	Paisley -----	103	530	Lindsay -----	3,465	8,345	
Waterloo -----	5,636	8,968	Penetanguishene -----	980	4,177	Madoc -----	177	1,130	
Watford -----	372	1,023	Port Carling -----	108	520	Marmora -----	119	1,004	
Welland -----	10,536	14,899	Port Elgin -----	339	1,415	Martintown -----	33	P.V.	
Wellesley -----	99	P.V.	Port McNicoll -----	85	950	Maxville -----	103	811	
West Lorne -----	236	768	Port Perry -----	232	1,175	Millbrook -----	92	749	
Weston -----	4,598	6,333	Priceville -----	10	P.V.	Morrisburg -----	291	1,484	
Wheatley -----	186	761	Ripley -----	102	420	Napanee -----	1,278	3,241	
Windsor -----	53,915	118,040	Rosseau -----	24	305	Newcastle -----	140	701	
Woodbridge -----	611	946	Shelburne -----	227	1,053	Norwood -----	132	710	
Woodstock -----	8,458	12,339	Southampton -----	502	1,467	Omeme -----	176	630	
Wyoming -----	77	538	Stayner -----	232	1,106	Orono -----	101	P.V.	
York Twp. -----	21,439	77,175	Sunderland -----	67	P.V.	Oshawa -----	17,548	26,610	
Zurich -----	119	P.V.	Tara -----	82	510	Ottawa -----	36,445	150,861	
(66 2/3-Cycle)									
Bronte -----	160	P.V.	Teeswater -----	152	873	Perth -----	1,723	4,197	
Oakville -----	1,124	3,369	Thornton -----	29	P.V.	Peterborough -----	11,761	24,977	
Trafalgar Twp. -----	492	V.A.	Tottenham -----	64	532	Pictou -----	1,174	3,400	
GEORGIAN BAY DIVISION									
(60-Cycle)									
Alliston -----	350	1,700	Uxbridge -----	256	1,480	Port Hope -----	2,287	4,997	
Arthur -----	144	1,089	Victoria Harbour -----	61	979	Prescott -----	1,430	3,318	
Bala -----	114	355	Walkerton -----	915	2,534	Richmond -----	60	428	
Barrie -----	3,978	9,559	Waubashene -----	72	P.V.	Russell -----	62	P.V.	
Beaverton -----	173	941	Warton -----	240	1,750	Smiths Falls -----	2,779	7,741	
Beeton -----	109	617	Windermere -----	26	117	Stirling -----	255	947	
Bradford -----	217	1,041	Wingham -----	720	2,149	Trenton -----	5,069	8,183	
Brechen -----	48	P.V.	Woodville -----	69	439	Tweed -----	195	1,181	
EASTERN ONTARIO DIVISION									
(60-Cycle)									
Cannington -----	136	761	Alexandria -----	189	1,976	Warkworth -----	66	P.V.	
Chatsworth -----	65	333	Apple Hill -----	39	P.V.	Wellington -----	163	948	
Chesley -----	484	1,812	Arnprior -----	1,235	4,019	Westport -----	82	725	
Coldwater -----	149	545	Athens -----	98	626	Whitby -----	1,289	4,236	
Collingwood -----	2,354	6,249	Bath -----	34	325	Williamsburg -----	77	P.V.	
Cookstown -----	66	P.V.	Belleville -----	7,184	15,498	Winchester -----	329	1,017	
Creemore -----	128	661	Bloomfield -----	83	636	THUNDER BAY SYSTEM			
Dundalk -----	213	686	Bowmanville -----	2,742	3,850	(60-Cycle)			
Durham -----	353	1,874	Brighton -----	351	1,462	Fort William -----	14,244	30,370	
Elmvale -----	132	P.V.	Brockville -----	4,638	11,112	Nipigon Twp. -----	204	V.A.	
Elmwood -----	49	P.V.	Cardinal -----	259	1,602	Port Arthur -----	23,711	24,217	
Flesherton -----	54	452	Carleton Place -----	1,621	4,143	NORTHERN ONTARIO			
Grand Valley -----	139	645	Chesterville -----	261	1,094	PROPERTIES			
Gravenhurst -----	1,093	2,261	Cobden -----	131	643	Nipissing District			
Hanover -----	1,277	3,190	Cobourg -----	2,045	5,907	(60-Cycle)			
Holstein -----	17	P.V.	Colborne -----	221	960	North Bay -----	4,711	16,013	
Huntsville -----	1,123	2,943	Deseronto -----	217	1,002	Patricia District			
Kincardine -----	641	2,483	Finch -----	78	396	(60-Cycle)			
Kirkfield -----	25	P.V.	Frankford -----	123	1,095	Sioux Lookout -----	300	1,967	
Lucknow -----	342	856	Hastings -----	105	823	Sudbury District			
Markdale -----	150	776	Havelock -----	124	1,103	(60-Cycle)			
Meaford -----	669	2,759	Irequois -----	231	1,123	Capreol -----	224	1,660	
Midland -----	4,995	6,764	Kemptville -----	323	1,230	Sudbury -----	9,233	35,812	
Mildmay -----	126	764	Kingston -----	13,282	29,545				
Mount Forest -----	466	1,936							

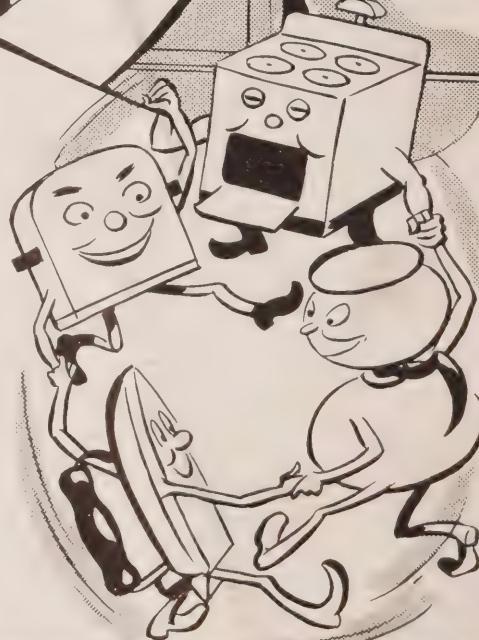
# **ELECTRIC APPLIANCES...** *Hard to Get* **BUT EASY TO CARE FOR**



• Your electric refrigerator, range, iron, toaster, coffee maker and all other electric appliances are time and money savers . . . today they are more valuable than ever. The likelihood of early replacement is slim indeed . . . as long as materials are needed for war purposes. Make your refrigerator last—close refrigerator doors as quickly as possible, defrost regularly, and only use it for perishable goods.

Just a few minutes extra care . . . just a little extra thoughtfulness and they will continue to give you longer efficient service.

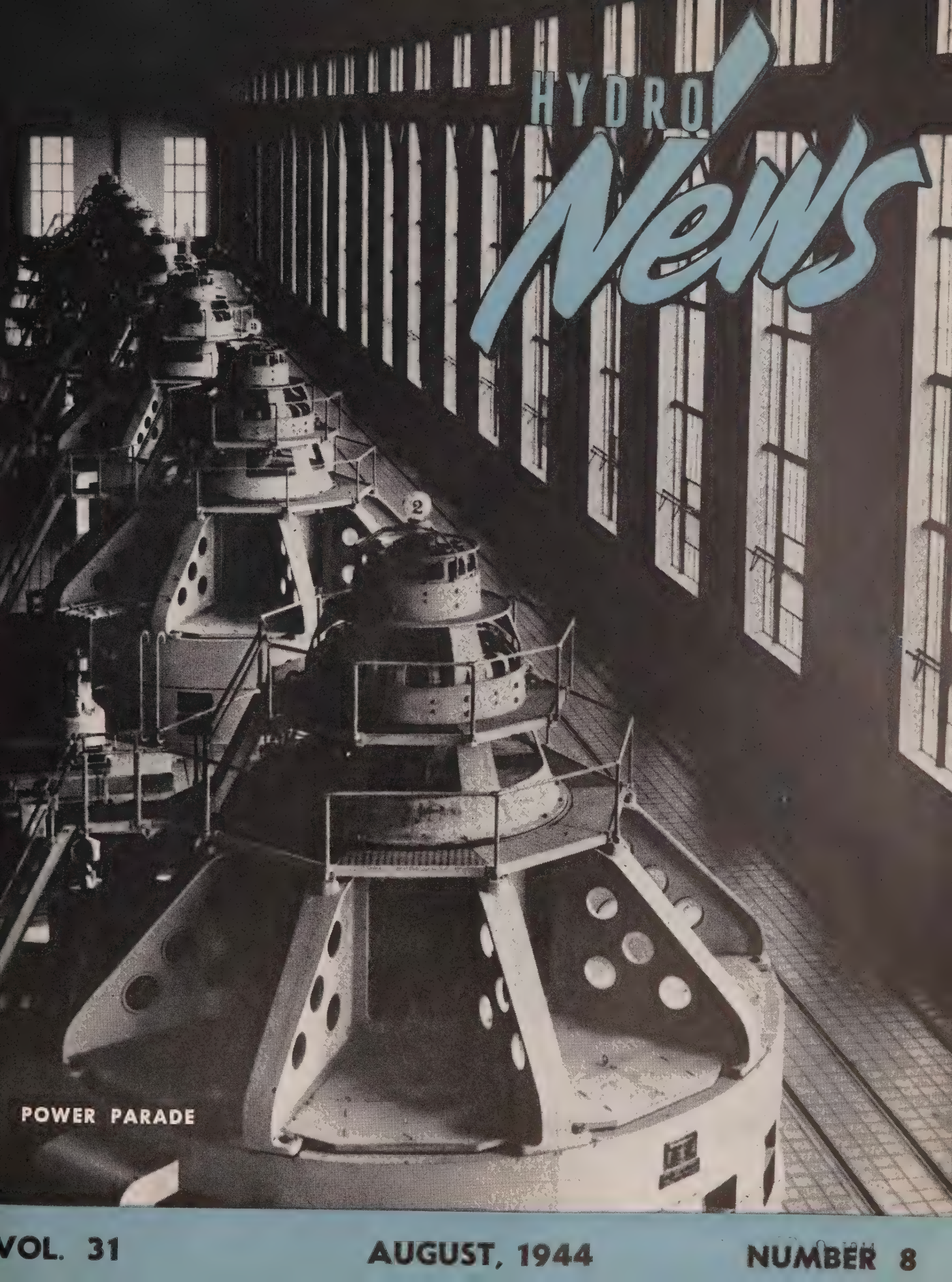
*If repairs are needed see your local electrician.*



**THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO**



# HYDRO *News*



POWER PARADE

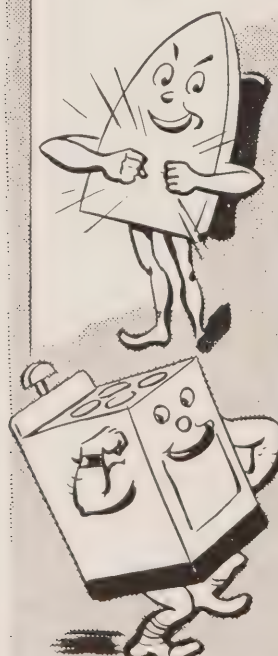
VOL. 31

AUGUST, 1944

NUMBER 8



**KEEP ELECTRIC APPLIANCES  
FIT FOR DUTY . . . .  
USE THEM WITH CARE**



● Give your Electrical Appliances good care and save repairs. The supply of new electric appliances is very limited. They cannot be built in quantities until their manufacturers . . . now engaged in making weapons of war . . . turn from the battlefield to the homefront.

Do your part—don't overload your washer or operate it longer than necessary. Be sure to oil the motor. Don't let leaky or dripping taps make your hot water heater work overtime. Keep your washer, your iron, and other electric appliances in good working condition by giving them the extra care that keeps them fit for duty.

*For appliance repairs . . . see your local electrical dealer.*





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HON. GEORGE H. CHALLIES, M.L.A.,  
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### The Front Cover



**A**N unusually interesting photographic impression of the massive generators at the Chats Falls development was obtained by J. H. Mackay of the Commission staff when he recorded this month's front cover illustration entitled "Power Parade." There are at present eight generators at this plant with a combined capacity of 217,000 horsepower, while provision has been made for the installation of another unit when necessary.

Volume 31

August 1944

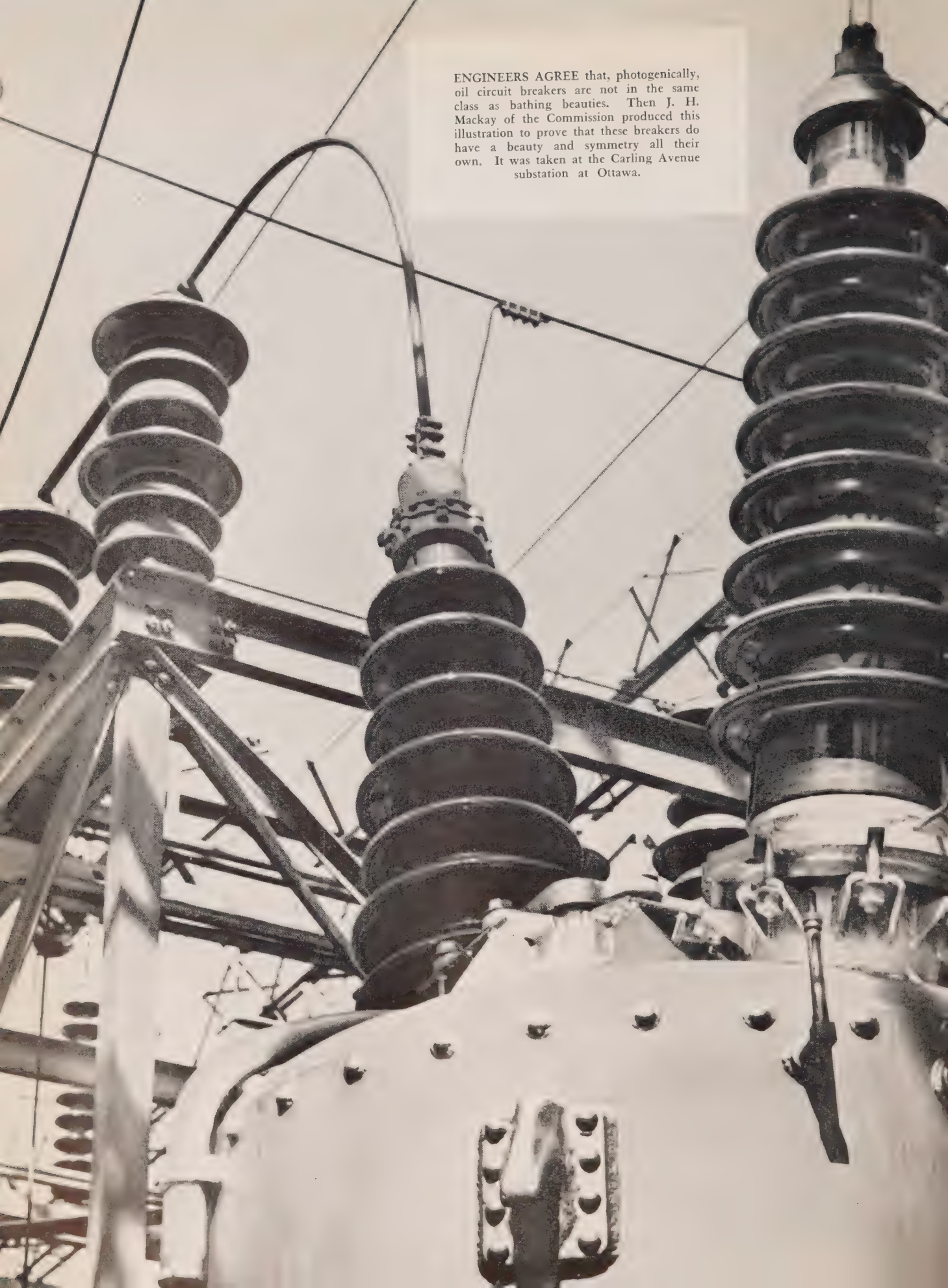
Number 8

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ENGINEERS AGREE that, photogenically, oil circuit breakers are not in the same class as bathing beauties. Then J. H. Mackay of the Commission produced this illustration to prove that these breakers do have a beauty and symmetry all their own. It was taken at the Carling Avenue substation at Ottawa.





## SYMBOL OF COURAGE

**W**HAT London is to Great Britain and Washington is to the United States, Ottawa is to Canada.

While these great centres may not be comparable from the standpoint of the respective areas they embrace, their symbolic significance and the pre-eminent roles they sustain in peace and war are along parallel lines. At a nation's capital are formulated the policies which shape the pattern of the political and economic life of its people, and mould its national character in the eyes of the world.

There are few in either Canada or the United States who would not unite in grateful tribute to the people of the British Isles for the unwavering spirit they have exemplified from the start of the war. In 1940, when they stood alone, the fate and future of free people everywhere hung in the balance. At that time, the name of London became a symbol of hope and courage in a world of apprehension and despair. Although battered and bleeding, London carried on, unbowed and resolute.

This knowledge not only brings a realization of what might have happened if London had failed, but it serves to accentuate the tragic tribulations of war which the people on this continent have been spared.

In Ottawa, which is the subject of an article in this issue of *Hydro News*, bombs have not taken a toll of human life and they have not blasted and scarred historic buildings, national monuments and homes.

Day to day inconveniences, which many Canadians may experience as a result of the war, are but nothing when compared to the "inconveniences" people in the front line have to endure. There is a great deal for which we must give thanks.

★ ★ ★

## SELL-AND-RUN VICTIMS

**E**LECTRICAL equipment whose use constitutes a hazard to human life and property has been unloaded on a number of hardware and other stores in Ontario by houses or agents, presumably operating outside the province.

H. J. McCaw, sales control inspector of The Hydro-Electric Power Commission of Ontario, has drawn attention to the activities of these people in the article, "Human Life Endangered," published in this issue of *Hydro News*. At the same time, he has clearly set

forth the serious consequences which may result from the use of unapproved equipment.

When making a check at several stores, H.E.P.C. inspectors discovered unapproved iron plugs, table taps, attachment plugs (plug caps), cube taps, fuses, switches, wall receptacles, outlet boxes, switch plates, cord sets and other items.

Rules and regulations, designed to protect the public, provide that all electrical or electrically-operated equipment must be tested for fire and accident hazards and must be approved before it can be legally advertised, displayed, sold or used. As Mr. McCaw points out, it is a simple matter to identify approved equipment as it will bear the manufacturer's name or trade name, the electrical rating in volts, watts or amperes and, in some cases, the approval number.

It is true that wartime conditions have created a scarcity of many reliable and approved household accessories, but this does not condone the actions of those who attempt to capitalize on the situation by making and selling cheap, poorly-constructed and dangerous equipment. It is significant that, in many cases, the salesmen who peddle this stuff are unknown, and that invoices do not bear the identity of the dealer.

Law-abiding store owners and their customers who may have been innocent victims of these unprincipled sell-and-run gentry, will not be at a loss in finding a descriptive name.

★ ★ ★

## FAST AND EFFECTIVE

**A**MONG the many important roles which electricity may play in the post-war world is the protection of grain against the ravages of the granary weevil and the grain borer.

It is claimed that electronic protection will be faster, cheaper and much more effective than present methods which are regarded as troublesome, uncertain and expensive. This is how it works: the grain, on a fast-moving conveyer, passes between two metal plates which are electrified with high-frequency currents: the kernels in less than a minute's exposure, are heated by induction to 130 degrees Fahrenheit, a process which destroys all traces of insect life, without affecting the food value of the grain itself.

When it is remembered that insect pests take a heavy toll every year, the importance and possibilities of electronics in this field can be readily appreciated.



# At the Capital

VIEW of the Houses of Parliament and library from the edge at Majors Hill Park, Ottawa, is shown in the upper reproduction, while the modern building of the Ottawa Hydro-electric Commission on Bank Street can be seen at the right. W. Canniff, manager of the al commission, is shown in the inset.



OTTAWA is a city where war is big business, where, for many, the tempo of life is hectic, where the quest of the house-hunter is almost hopeless and where the butcher, the baker and Hydro are keeping pace with the demands of permanent residents and a civilian army of occupation.

For the population it is, in a sense a war of movement which starts in the morning when city-bound street cars and buses are stormed in commando style by rugged suburbanites. Although many fail in the first "assault," they show remarkable restraint. As yet, they have not compelled any street car operator to yield his space, nor have they attempted to occupy the roof or the cowcatcher!

While in Ottawa recently, Hydro News studied the technique of its citizens in boarding a crowded car. From these observations, it would appear that many favour the side approach with a courteous but firm rotating movement of the shoulder. If there are a few square inches of space available, this method appears to bring satisfactory results.

One elderly gentleman, who was compelled to retire after a gallant but unsuccessful effort, glared at us as he adjusted his collar and tie. "What do you think of it," he panted.

We told him we were a visitor but that we found "it" quite interesting.

"Where are you from?"

"Toronto," we replied.

"Fine city, fine city," he conceded. "Well, you tell the folk in Toronto that the folk in Ottawa really know there's a war on. We fight our way to offices in the morning, work on war stuff all day, battle our way home at night, change corn plasters and even share our beds. But say, don't be running down our street car system. The fellows who run these things have their problems. Remember there's a war on."

At that moment, another street car came along. "G'bye," he shouted. The last we saw of him was on the street car step—using the side approach method!

This spirit of tolerance, good nature and "remember there's a war on," seems to exemplify the attitude of most citizens in meeting day to day inconveniences at the Capital where the population has increased from 147,000 in 1939 to 164,000 at the present time. These figures in themselves, tell an eloquent story of the housing and other problems

*(Continued on page 6)*





ON THE ground floor of the Ottawa Hydro building are all modern facilities for doing business with the public. Here, two ladies are shown paying their Hydro bills.



TWO INTERESTED ladies were looking over an electric range when this photograph was taken in the large, well-appointed showroom in the modern building which is the home of the Ottawa Hydro.



THIS ILLUSTRATION gives a good impression of a section of the bright, modern, well-ventilated offices of the Ottawa Hydro Electric Commission.



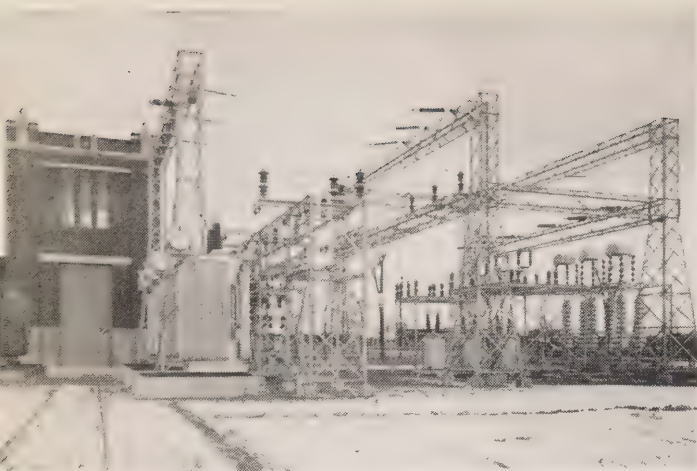
BEHIND THE glass partition in the background of this picture, taken in one of the spacious rooms in the Ottawa Hydro building, girls are operating business machines, while those in the foreground are engaged in other routine duties.

WARTIME CONSERVATION of electricity made it necessary to use coal for the heating of the Ottawa Commission's building. The electric furnace is shown in this illustration.



HOME FROM home is how one Ottawa Hydro employee described this delightful little kitchenette, located in the basement of the Commission building. It is used by those who find difficulty in getting home for lunch because of heavy traffic conditions.





HERE IS one of the four substations through which Hydro power is distributed to the domestic, industrial and commercial consumers of Ottawa.



THIS IMPOSING structure is known as the No. 3 substation which was erected in 1928. Today the total Hydro load in Ottawa is over 39,000 horsepower.



MEN WERE at work laying cable when this photograph was taken. It shows the fine No. 2 substation, located at Bronson and Carling Streets, Ottawa.

OLD AND new methods are photographically portrayed in these two pictures. In earlier days, Hydro maintenance men used "horse and buggy" to inspect street lights. Today, they cover the ground in trucks.



*(Continued from page 4)*

that have to be faced in this city which has an area of 10 square miles.

By reason of the fact that Ottawa is Canada's focal point in the planning and directing of her war effort, the transition within the past five years is, in many respects, different to the change that has taken place in other centres where the emphasis is on industry.

#### First Commissioners

This impression was quickly formed by Hydro News upon the occasion of a recent visit to Canada's capital where the freedom of the local Hydro-Electric Commission's fine, modern building at 109 Bank street, was cordially extended by S. W. Canniff, the general manager.

It was noticeable that the same quiet, friendly atmosphere, which is to be found in Mr. Canniff's office, is characteristic of every department in the local commission which was first established in 1916.

While reminiscing with Hydro News, he recalled that the members of the first commission were P. D. Ross, J. A. Ellis and N. D. Porter who was mayor of Ottawa in 1916 when the load was 5,500 horsepower. Members of the present commission are F. H. Plant, chairman; P. D. Ross, who was on the original commission, and mayor J. E. Stanley Lewis, while the Hydro load in Ottawa today is 39,000 horsepower distributed through four substations and over 175 miles of transmission lines.

In thumbing over the records, Mr. Canniff stated that there are at present 16,000 domestic, 1,500 commercial and 205 industrial consumers of Hydro power in the Capital and, within the past ten years the load has recorded an increase of 13,000 horsepower, while the annual revenue is now \$1,100,000.

An indication of the efficient administration of Hydro affairs in Ottawa is to be found in the fact that there is now a sinking fund reserve of \$250,000, while the outstanding debenture balance is \$184,000, the final payment being due in 1955.

Mr. Canniff told Hydro News that the use of electricity in the Capital had been cut by twenty per cent. After the war, he said, he expected that any decrease in the number

*(Continued on page 8)*



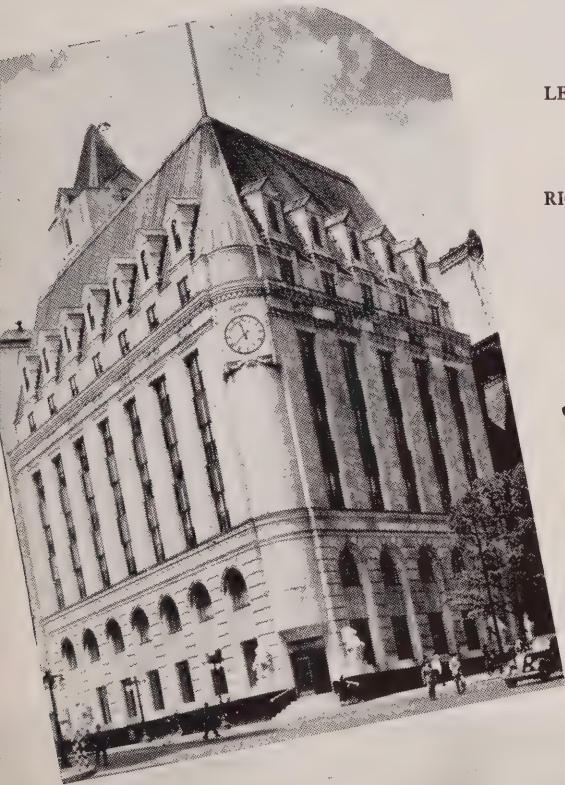




THIS IS the Supreme Court building where the highest court in Canadian jurisprudence sits.

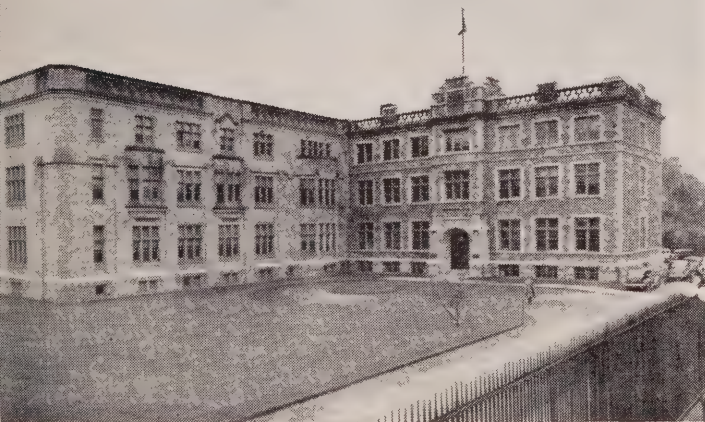
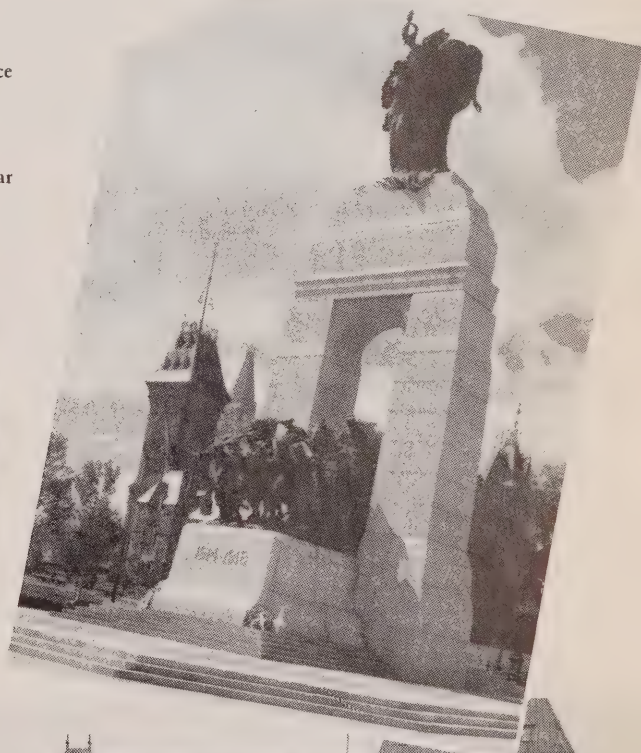


HERE IS an inviting setting showing the Rideau Canal, looking east toward the Bank Street bridge.



LEFT: The new Post Office Building, Ottawa.

RIGHT: The National War Memorial at Ottawa.



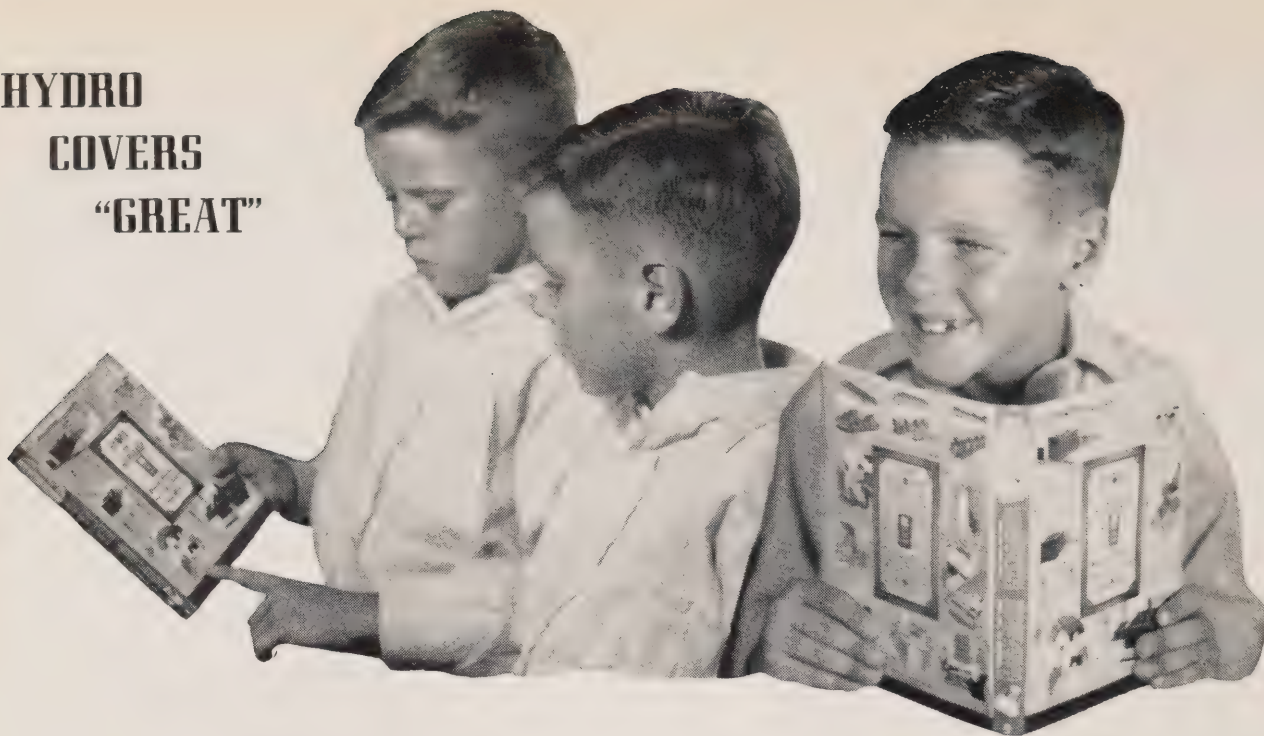
IN THIS building are to be found many interesting and historic records. It is known as "The Public Archives of Canada."



STATELY AND imposing, this is the Justice Building, located on Wellington Street, Ottawa.



## HYDRO COVERS "GREAT"



**N**O, it won't be long before the back-to-school trek starts again! And won't all the kids just be tickled to death to get back to readin', writin' and 'rithmetic? Or will they? At any rate, these little gentlemen did not appear to be too unhappy about the prospect. They took time out from pre-school invasion exercises to assure Hydro News that the school book covers designed by Hydro are "great." At the left, "Big Brother" points out to "Little Brother" one of the many interesting illustrations on the new cover, while the fellow on the right was putting one of the covers to good use. Reproduced in four colours, these covers have an educational as well as a practical value for they tell in simple language, and by means of simple pictures, the story of Hydro, how electricity is generated and distributed, and the many purposes for which it is used. Already, many Hydro municipalities have ordered supplies to meet the requirements in their areas.

### AT THE CAPITAL

*(Continued from page 6)*

of consumers would be offset by a restoration of services curtailed by order of the Dominion Power Controller.

In discussing Ottawa in general, he mentioned a number of interesting facts associated with the city which, in 1858, was selected by Queen Victoria as the seat of the Canadian government after Kingston, Toronto, Quebec and Montreal had each, for a time, held the distinction of being the Capital.

It was in 1613 when the first white man saw the site which is now Ottawa. He was Champlain who, himself, named the picturesque Rideau river which carries the waters of the Rideau Lakes down to Ottawa. It appears that the river derived its name from the curtain-like appearance of its falls. Ottawa's other waterfall, the Chaudiere, has a name of more ancient origin. Because of an unusual formation produced by the action of the water below the falls, the name given by the early Indians signified kettle which the French translated as Chaudiere.

#### Incorporated in 1884

One of the first things the visitor to Ottawa notices is the series of locks which link the Rideau Canal with the Ottawa river. Following the war of 1812, this canal was built as a military project by the Royal Engineers in 1826. Acting on the advice of the famous Duke of Wellington, the British Government spent \$4,000,000 in its construction which was carried out under the direction of Col. John By who had his home on what today is Major's Hill Park. During the five years occupied in building the canal, the settlement gradually developed and it was named Bytown.

In 1884, when there were many settlements on both sides of the Ottawa river, Bytown was incorporated and the name changed to Ottawa.

If the early settlers could see the Ottawa of today they would probably be astounded at the transformation which has taken place in the city which is dominated by the magnificent Gothic buildings which stand like massive sentinels on Parliament Hill. Fine monuments to the memory of Laurier, John A. MacDonald and other eminent Canadian leaders are to be found on the trim expanse of green-carpeted grounds within the pillared portals of Parliament Hill.

Upon enquiry, the curious and interested visitor will be informed that the Houses of Parliament were built originally between 1859 and 1865 and, ten years later, the Mackenzie Tower was added to the West Block. The passing years have served to enhance these stately structures with the dignity associated with age. It was in the year 1916 when the Central Block, with the exception of the impressive octagonal Library of Parliament, was razed to the ground. When plans were made to rebuild this section, it was undertaken on a large scale, and with a higher tower, now known as the Peace Tower. While party lines are drawn inside the Commons, the Peace Tower with its glorious fifty-three-bell carillon speaks in a voice, which is understood by all, and which cuts across all lines of party, race and creed. There are times when it is heard in reverent tribute to Canada's heroic war dead of the last war whose names are inscribed on the Altar of Remembrance in the Memorial Chamber below the Tower. On other occasions, it peals across the city, with ringing messages in music for all free people.

The voice of the Peace Tower seems to assume a deeper and more significant meaning if it speaks as you happen

*(Continued on next page)*



ONCE UPON a time—a matter of four hundred odd years ago—very odd years in fact, some of the Spanish folk were apparently just “bugs” about beetles.

On the other hand, according to the best information, the beetles did not reciprocate. They were annoyed and even resentful for these beetles belonged to a very brilliant family. (The Beetle Blue Book gives the name as Lampyridae, which is highly significant). Their brilliance was very obvious to everyone for they possessed the power of emitting light.

It has not been confirmed if this is why the first part of their name spells “lamp.” However, the Spaniards in tropical America at that time, must have had ideas of that kind for, when they went on night hunting trips, they “conscripted” these power-packing insects to light the way. As the accompanying artist’s impression would indicate, the lot of the Lampyridae was both unfortunate and embarrassing when they met up with Spaniards.

In this enlightened age of Hydro power and Hydro long-life lamps, it’s quite a different story. The Lampyridae do not have to

## 400 YEARS BEFORE HYDRO



*hide their lights under bushels, lest Spanish gentlemen be lurking nearby. They may go forth freely, with lamps burning brightly, in quest of their mates.*

### AT THE CAPITAL

to pass the truly magnificent war memorial which dominates the broad stretch of Confederation Square.

To the curious visitor, Parliament Hill and its environs present a particularly interesting and colourful spectacle three times a day—in the morning, at noon and at night. At these times, Ottawa can really be seen on the march. In these work-bound, lunch-bound and homeward-bound processions, privates, ordinary seamen and aircraftsmen rub shoulders with high-ranking officers, cabinet ministers, government officials, secretaries, stenographers and clerks. Many carry well-loaded brief cases, while the pockets of junior clerks betray the bulge of the noon-day snack.

### Guarded by “Mounties”

Hundreds swing in the direction of the pile of buildings on “The Hill,” while hundreds more scurry along to the squat rows of temporary buildings which are guarded by Canada’s famous “Mounties” and honeycombed with small, unpretentious offices. The occupants of these barrack-like buildings give one the impression of infiltrating rather than entering. After the big morning processions have passed, the clicking, penetrating ra-tat-tats from batteries of typewriters are soon heard echoing across the streets, and the business of war is under way for another day.

Industrially, Ottawa is still what might be described as a city of promise and opportunity. It is a city which enjoys the advantages of being in close proximity to great sources of water power and immense timber limits which were the first inducements to pioneer industries. While there are a number of industries in Ottawa, including ten war industries engaged in making aeroplane parts, explosive accessories and instruments, it is essentially a “white collar city” where

permanent and temporary government departments are carrying on the administration of war business.

Asked if Ottawa could claim the distinction of being “first in the field” along any line, Mr. Canniff told Hydro News that the Capital does claim the honour of being the first city to have street cars operating the year round and that it was the home of J. R. Booth, “The Lumber King of North America.”

While making an inspection tour of Ottawa’s up-to-date three-story Hydro building, which was constructed in 1935, Hydro News found in the basement a small, homelike kitchen, complete with linoleum, cupboard, table, refrigerator, electric hotplate, crockery, cutlery and food.

Mr. Canniff explained that he had inaugurated this feature for the benefit of some of the employees who, on account of crowded street cars, found difficulty in getting home for lunch at noon.

Another interesting thing about the basement is the fact that it has, or had, three different types of furnaces. Originally, it had an electric furnace and off-peak power was used for heating purposes. This furnace had an oil furnace connection in parallel in case of emergency. When it became necessary to curtail electricity, this furnace was shut down, and because sufficient fuel oil was not available, the oil furnace had to be remodelled into a coal furnace.

“And so,” smiled Mr. Canniff, “we are now burning coal.”

On the main floor of the building is a spacious showroom and, of course, thoroughly modern facilities to handle all public business with Hydro. In the upper floors are equally spacious and bright business offices.

All in all, Hydro has a very fine home in Ottawa and is playing its full part in meeting the needs of Canada’s Capital in wartime as it did in the days of peace and, as it will continue to do when the war is over.

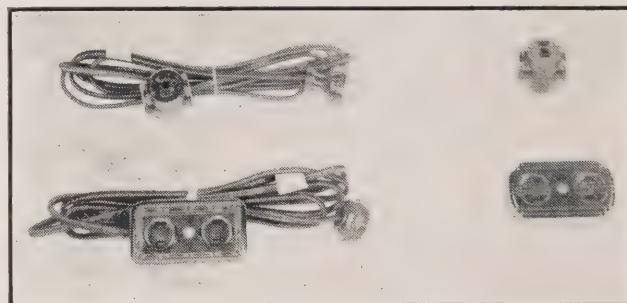
# HUMAN LIFE ENDANGERED

By H. J. McCaw

Sales Control Inspector, H.E.P.C.

**C**ERTAIN wholesale houses, presumably outside of Ontario, are unlawfully making sales of unapproved electrical equipment to hardware stores throughout the Province. In many instances, the use of this dangerous equipment constitutes a decided fire and accident hazard. No doubt, scarcity of reliable and approved household accessories and fittings is due to wartime conditions, but this cannot be accepted as an excuse when human life may be endangered.

Most people in this Province are aware that all electrical or electrically operated equipment must be approved before it may be legally advertised, displayed, sold or used. This is in accordance with the rules and regulations governing electrical installations and equipment, made pursuant to The Power Commission Act, R.S.O. 1937.



WHEN SOLD without cords, the current taps, shown on the right, are not approved. At the left are labelled and approved cord sets.

electrical rating in volts, watts or amperes, and in some cases the approval number. If the devices are not so marked, then they are being sold illegally.

## Tested for Hazards

Every piece of electrical equipment that has been approved has been tested for fire and accident hazards. Equipment is tested to ascertain if it is suitable for the work it has to perform.

Many types of equipment are approved for specific uses. This does not mean that because a certain piece of equipment is approved, that it may be used anywhere and under any condition. There are restrictions. Take open-type motors for instance—they are approved, but they could not be used on blowers for furnaces. For such a job, a

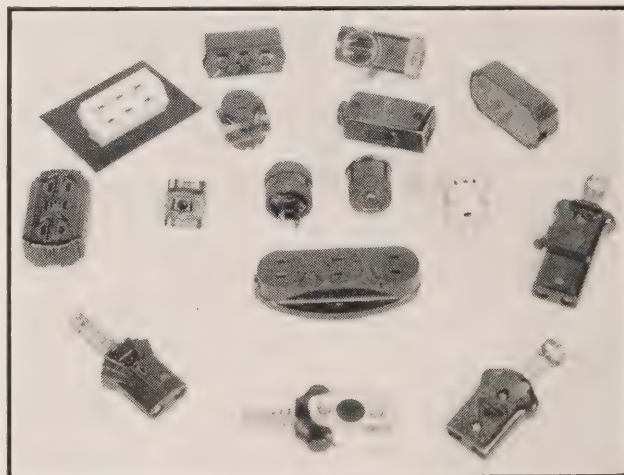


HERE ARE second-hand, keyless 250-watt, 250-volt sockets. At the top, it will be noted, the paper liner is for push-through sockets. In other words, a potential hazard exists as the liner may not enclose the live terminals. In the centre, it can be seen, the paper liner is too long for the brass shell, thus preventing the lamp from making a good contact, while rust and dirt can be detected in the sockets shown at the bottom of this illustration.

Hydro inspectors are, therefore, seeking to safeguard the public against unfortunate consequences which may result if they instal in their homes unapproved iron plugs, table taps, attachment plugs (plug caps), cube taps, fuses, switches, wall receptacles, outlet boxes, switch plates, cord sets and other equipment which may be on sale at certain stores.

Recently the H.E.P.C. inspectors checked several stores in Toronto and found many unapproved wiring devices. As this equipment is a potential hazard to life and property, warnings were immediately issued about the sale of these goods.

It is a simple matter to tell approved equipment, as it will bear the manufacturer's name or trade name, the



HYDRO INSPECTORS gathered in these many pieces of unapproved equipment from Ontario stores. The current tap, at the upper right, has a slot for a cord so that a second device can be connected. This piece of equipment is dangerous because it invites users to attach more current taps. If more outlets are required in a room they should be installed in the proper manner.



## COMMITTEES APPOINTED BY O.M.E.A. EXECUTIVE

**W. Ross Strike Calls Upon Municipalities To Take Full Share Of Responsibility As Partners In Hydro.**

**I**N his appointment to The Hydro-Electric Power Commission of Ontario, Hydro municipalities have a chance to take their full share of responsibility as partners in Ontario's great public ownership enterprise, declared W. Ross Strike, president of the Ontario Municipal Electric Association, at an executive meeting of that body recently.

"I will try to do my best to have the municipalities realize they are full partners," he stated, "but it will also require the co-operation and assistance of the members of this executive and of all local commissions."

A resolution expressing the appreciation of the O.M.E.A. executive concerning Mr. Strike's appointment was unanimously endorsed and a copy was ordered sent to Prime Minister George A. Drew.

During the meeting, Mr. Strike referred to the report of Dr. Thomas H. Hogg, chairman of The Hydro-Electric Power Commission of Ontario, as contained in the 1943 annual report of the Commission to the Lieutenant-Governor of Ontario. In making reference to the amalgamation of the three Southern Ontario systems, Dr. Hogg's report read: "Because there was a strong active municipal organization representative of all co-operative systems, the Commission was able effectively to consult with and secure approval by the municipalities concerned."

Mr. Strike pointed out that this was the first time the O.M.E.A. had been recognized in this manner, and that it might be the beginning of a stronger, more effective organization.

Standing committees appointed at the meeting were:

**LEGISLATION:** K. A. Christie, K.C., Toronto, chairman; E. W. Grant, New Toronto; J. A. Leslie, Scarborough Township.

**INTER-ASSOCIATION:** J. B. Hay, London, chairman; Roy Pierson, Brantford Township; Miss K. Ciceri, Guelph.

**STANDARDIZATION:** G. A. Edwards, Windsor, chairman; H. R. Henderson, Woodstock; W. V. Brown, Meaford; A. P. St. Louis, Riverside.

**POST-WAR:** R. D. Boyes, Alliston, chairman; J. B. Hay, London; R. G. Walsh, Port Arthur; F. H. May, St. Marys; R. Thomson, Paris; J. T. Barnes, Sarnia.

**WAR PROBLEMS:** P. R. Locke, St. Thomas, chairman; S. J. Wilson, Beamsville; M. P. Duff, Belleville; C. H. Moors, Fort William; F. E. Walker, St. Jacobs; J. Irwin, Brampton.

**ORGANIZATION AND PUBLICITY:** A. G. Jennings, East York, chairman; R. J. Beaulieu, Penetanguishene; James Halliday, Kingston; George Eifert, Tavistock; J. R. Pattison, Fort William.

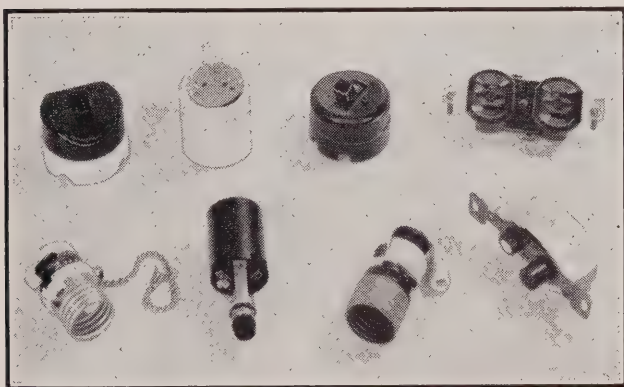
**CONSTITUTION:** K. A. Christie, K.C., Toronto, chairman; Dr. W. J. Chapman, St. Catharines; G. S. Mathews, Peterborough; J. B. Hay, London; Roy Pierson, Brantford Township.

suitable motor of an enclosed type is necessary. Again, heater cord sets, which most hardware stores sell, are approved for one type of work, namely, where high-heat conditions are prevalent, such as irons, toasters and other similar appliances. Other kinds of cord sets, such as extension types, should not be used on heating equipment.

Lamp sockets rated at 250 watts have recently appeared on the market. Such sockets have been refused approval and may not be legally disposed of in this Province. The reason for this is that most appliances or other electrical equipment that might be plugged into a lamp socket are rated in excess of 250 watts, and the socket is an accident hazard.

To illustrate the type of equipment that some jobbers will sell, a quantity of sockets were found in some hardware stores, made up of second-hand brass socket shells and new interiors. The brass shells and the interiors were both of different manufacture; and, in addition to these being unapproved, the interiors did not fit the shell properly, thus adding to the existing hazard.

While on the subject of lamp sockets, washing machines, for instance, should never be plugged into lamp sockets.



SHOWN HERE are various types of unapproved wiring devices. These might not pass the fire and accident hazard tests because of the cheap construction. The various sockets have a 250-watt, 250-volt rating which is not recognized in Canada. This rating is inscribed on the half-finished porcelain socket.

The current taken to start a motor is in excess of the rating of any lamp socket, and the operator could very easily be seriously burned about the hands.

In 1940, the approval of electrical equipment was taken over by the Canadian Engineering Standards Association, an independent organization in Canada, whose purpose is standardization, and who maintain an Approvals Division. Previous to this, The Hydro-Electric Power Commission of Ontario maintained an approvals laboratory. The reason for the change was that the work of approvals would be done by an independent organization. The various provinces in Canada have agreed to accept the C.E.S.A. approval of electrical equipment which has been granted to manufacturers. The law in Ontario, however, still requires that electrical equipment be approved by the H.E.P.C., and this is done by the Commission adopting the approvals reports of the Canadian Engineering Standards Association. When you see equipment marked "CESA App. No. —," you can take it for granted that it is Hydro approved.

When buying electrical equipment, it would be well to demand proof that it is approved.





WILLS MACLACHLAN, head of the Commission's employees relations department, after explaining principles of resuscitation, proceeds to demonstrate with C. W. Moat acting as "patient." In the group of "students" are, from left to right, J. W. Fitzmaurice, C. E. Reynolds, Wilson Berry, John Hobson, George MacNamara, R. A. Ellis, Gerald Geddes, Ross Lemire, John Crawford, H. A. Johnson, W. E. Roberts, Phil F. Wayman, D. C. McAdam, Frances L. Powell, R.N., Donald Shook and John MacLellan. Kneeling in front, from left to right, are F. J. Burns, G. H. R. Emery, W. E. G. Taylor, J. A. Kemp, J. N. Lucas and George Garnett.



UNDER THE supervision of Miss Powell, Messrs. Fitzmaurice, Ellis and Crawford proceed to apply a Thomas splint to a fractured leg, the limb, in this case, belonging to J. N. Lucas.



JUST A few deft turns and knots later and the boys had all but completed the job with the Thomas splint. Nurse Powell looks over the work with an approving smile.

# Streamlin

SEVERAL Commission employees, whose work takes them into remote areas where medical attention is not readily available, have completed a one-week streamlined course in first aid to the injured, successfully candidates having received certificates which were awarded jointly by the St. John Ambulance Association and the Canadian Red Cross Society.

The course in question is based upon the First Aid Manual compiled by a committee, headed by Wills MacLachlan of the H.E.P.C. employees relations department and comprising Surgeon Commander C. H. Besant, R.C.N.V.R.; Captain J. Harold Couch, R.C.A.M.C.; Lieutenant Colonel W. J. Deadman, R.C.A.M.C.; Major Robert E. Gaby, R.C.A.M.C.; The Hon. Mr. Justice P. I. Gordon, K.C.; Wing Commander A. D. Kelly, R.C.A.M.C.; Dr. P. B. Macfarlane; Surgeon Lieutenant Edward Seller, R.C.N.V.R.; Lieutenant Colonel R. W. I. Urquhart, R.C.A.M.C., and Lieutenant Colonel Malcolm J. Wilson.



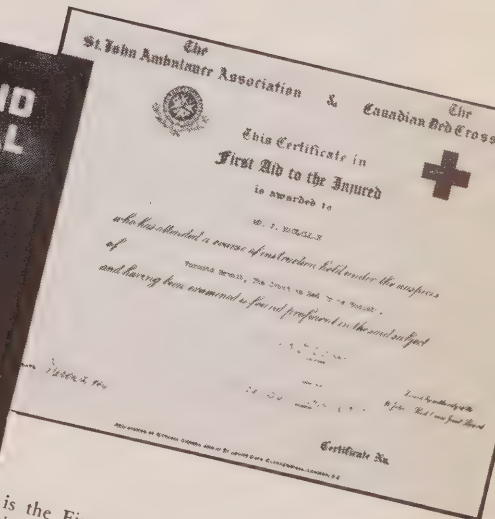
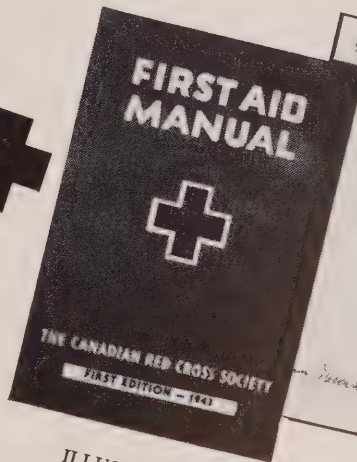


LACK OF a stretcher is really no problem, Wills Maclachlan assured an enquiring student. He then proceeded to show the class what could be done by improvising with a blanket, as illustrated here. The gentleman being taken for a ride is G. H. R. Emery.



BEAUTY MAY be only skin deep but first aid goes a lot deeper, as the "students" (below) discovered when "teacher," with the aid of chalk and blackboard, proceeded to discuss the structure beneath the "mortal coil."

# FIRST AID



ILLUSTRATED HERE is the First Aid Manual along with a copy of the certificate which was awarded to all candidates who passed the examination.



C.A.M.C., representing the Canadian Medical Association.

Copies of the manual are now in the hands of all Hydro field employees and the special course, designed to familiarize the men with a knowledge of the essential principles of First Aid, was conducted under the direction of Wills Maclachlan, Dr. R. E. Gaby, and Frances L. Powell, R.N., who was the Commission nurse and who is now serving with the Royal Canadian Navy.

Twenty-two men identified with the operating, hydraulic, transmission line engineering, employees relations and construction departments of the Commission were enrolled for this experimental course which, it is reported, proved highly successful. The examination, given at the end of the week's study, showed that the "students" had acquired a remarkable proficiency in first aid and that they would know what to do in case of emergency.

The accompanying photographs were taken while the course was under way.





**I**F Ontario's 800,000 domestic and commercial meters were to be "off the beam," even a fraction, in the matter of accurately recording the consumption of electricity, it would represent a major variation in revenue.

Actually, these meters record the sale of something like fifty million dollars worth of power a year. Thus, an error of a tenth of one per cent in registering the kilowatt-hours consumed would mean being "out" one way or the other to the extent of approximately fifty thousand dollars over a period of twelve months.

This interesting fact focuses attention upon the important job which is being done by the members of the H.E.P.C. laboratory staff who are responsible for maintaining the accuracy of measuring equipment.

To many laymen the activities of these skilled technicians are as mysterious as they are intriguing, for once in the laboratory the visitor finds himself in a bewildering world of ohms, amperes, microvolts, potentiometers and resistors. It is a world of impressive apparatus and equally impressive calculation—a world in which, it seems, even "hairline" accuracy is not good enough.

### World of Precision

Recently, Hydro News had the interesting experience of spending a few days in this world of scientific precision. With the helpful co-operation of W. B. Buchanan, engineer-in-charge of the electrical section, and of G. B. Tebo, the supervising engineer, an effort was made to get answers to a number of difficult "whys" and "whats."

In the first place, it seems, there is a fundamental system of units or yardsticks, by which electricity is measured. After much controversy and discussion in the electrical field, so-called international units were adopted some fifty years ago, and these are still accepted, with minor changes, as the legal standards for Canada and most other countries. These units are in general, based on the reactions and characteristics of chemically pure substances, like mercury or silver, together with the other necessary dimensions of mass, length and time.

National standards, based on these international units, are maintained in each country, and these form the legal basis for measurements of electrical quantities. In Canada the National Research Council has the custody of these standards, and it is the ruling authority, and ultimate court of appeal in cases of dispute.

The ohm is defined as the electrical resistance of a column of mercury 106.300 centimeters long and one square millimeter in cross section. Similarly, the ampere is the



THE PHOTOGRAPHER caught G. B. Tebo, supervising engineer of the electrical section of the lab, taking two at a time. In his left hand is a clip-on ammeter.

*This is the second in a series of three articles on the H.E.P.C. laboratories.—The Editor.*

current which will deposit silver from a silver-nitrate solution at a rate of 0.001118 gram per second.

These primary standards have now been supplemented by working standards which are more easily reproducible, and may be transported from place to place for intercomparison with those of other laboratories. Thus the ohm, as a physical standard, is not usually of mercury at all, but is represented by groups of resistors, constructed of manganin wire, and kept under controlled conditions at national standardizing laboratories.

A group of these resistors in values of .001, .01, .1, 1, 10, 100 and 1000 ohms are maintained at the H.E.P.C. lab. To ensure their accuracy to within .01 per cent, these resistors are sent periodically to the National Research Council at Ottawa, or to the Bureau of Standards at Washington, D.C., for comparison with their primary standards.

Since Ohms law definitely relates the three electrical quantities (the ohm, ampere and volt), only two of them need be represented by physical standards in order to determine all three.

The ampere has never been embodied in a convenient workable standard. On the other hand, the volt is very adequately represented by the well-known Weston standard cell, and the ohm by coils of manganin wire. Accordingly, commercial laboratories maintain standards of the three



quantities of resistance, voltage and current by means of standard resistors and standard cells.

### Graduated Slide Wire

Before a standard cell becomes of any practical use, it is necessary to have some auxiliary apparatus with which to inter-compare cells and to compare the unknown voltage that is to be measured, with the cell. The device used for this purpose is a potentiometer which, in its simplest form, is a graduated slide wire which carries a current from a battery source. The current is adjusted so that the voltage drop across a part of the slide wire exactly balances that provided by the standard cell. When so adjusted, the graduations of the slide wire accurately represent the actual voltages across each part of the slide wire.

This simple potentiometer permits measurements of direct current (d.c.) voltages from a few microvolts up to about 1.5 volts. When higher voltages are measured, a resistance multiplier called a volt box is employed, extending the range up to 200 volts.

Current value is measured by passing the unknown current through the appropriate standard resistor, the potentiometer being used to record the voltage drop across the resistor.

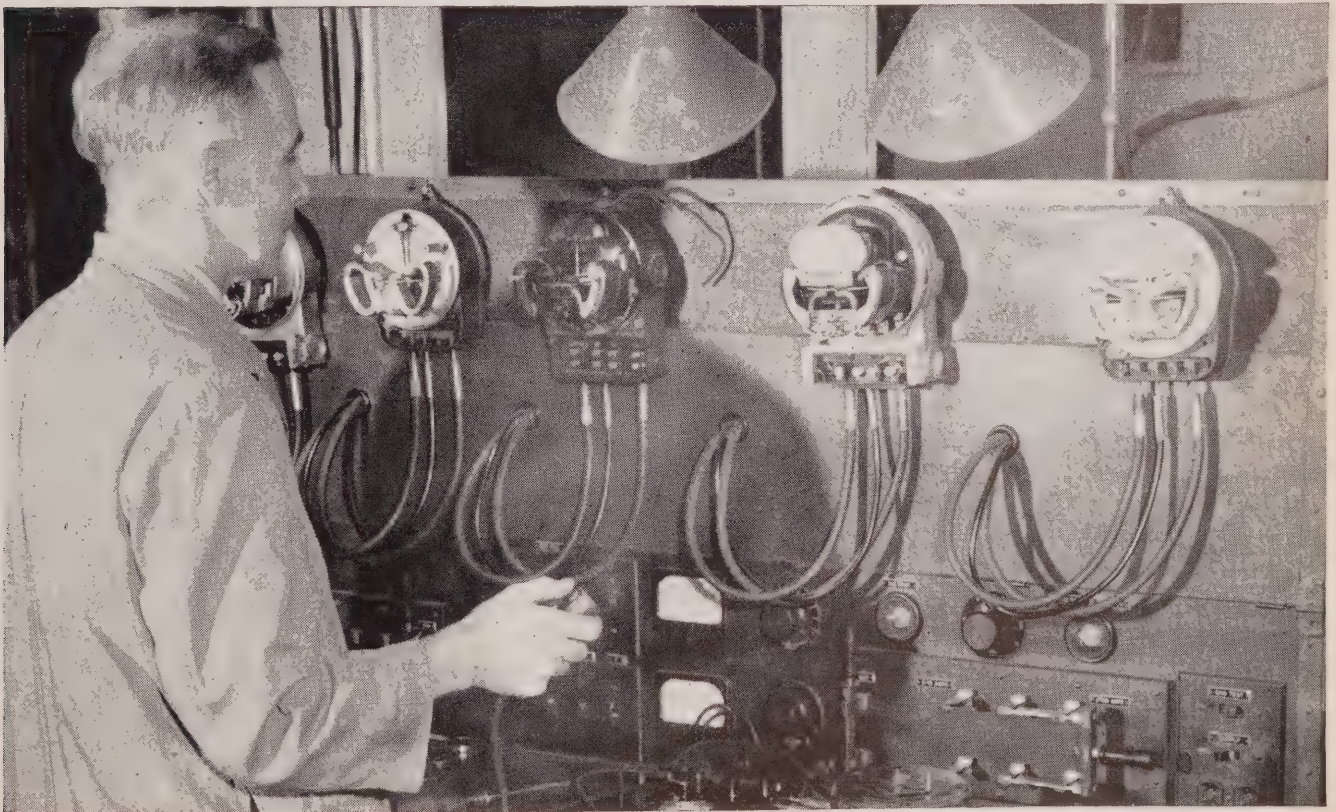
Now a word about measuring alternating current (a.c.). The transfer from measurements of d.c. to a.c. is achieved

by using the dynamometer type indicating meter, which responds equally to direct current or low frequency alternating current.

In the H.E.P.C. lab, three such transfer instruments are used—a voltmeter, ammeter and wattmeter of the long scale type. These are calibrated first on d.c., and then used as alternating current standards for the calibration of less precise types. This scale has an accuracy of better than .05 per cent.

Such meters do not age or wear out, but are more or less permanent laboratory fixtures so long as they are given the necessary care. In other words, the long scale standards keep the portable standards, such as ammeters, voltmeters and wattmeters, within their limit of accuracy, which is about  $\frac{1}{4}$  of one per cent. These in turn are used as standards to calibrate ordinary portable meters used for general testing where errors of one or two per cent can be tolerated.

As voltmeter scales are usually extended by the use of resistance multipliers, and d.c. ammeters employ low resistance shunts for measurement of large currents, the Commission's lab must be equipped to measure resistances, both high and low. Such measurements involve the use of precision types of Wheatstone and Kelvin bridges. The Wheatstone bridge is capable of measuring from one ohm up to about one million ohms, and for most of its range,



IN THIS illustration, F. J. Smith, well-known H.E.P.C. laboratories' meterman, is seen working on a portable meter test board, which accompanies him to all parts of the province.





W. B. BUCHANAN, head of the electrical section of the H.E.P.C. laboratories, is shown pointing to an interesting development (his own by the way) in the art of metering welding loads.

suppress harmful vibrations. These dampers, made of iron and weighing from five to ten pounds, are attached to the conductor a few feet from the suspension point. This device, developed by the H.E.P.C. laboratories and sponsored by one of the Commission's Research sub-committees, effects savings running into hundreds of thousands of dollars by eliminating failures of transmission lines due to vibration.

These applications of accurate electrical measurements extend far beyond the standardizing laboratory, yes, even beyond the Hydro network which covers Ontario. Under present war conditions, it is not unusual to find a laboratory technician calibrating a meter which may guide a bomber over Berlin.

Many radio transmitters, tested by Hydro technicians, have probably been used by Canadian forces in the recent invasion of France as well as on other fighting fronts.

The fact that the H.E.P.C. laboratory occupies a pre-eminent position in the field of electrical measurements reflects, not only the accuracy of the laboratory instruments and scientific equipment, but also the patience, skill and enterprise of the engineers and technicians who use them.

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THIS IS what a Kelvin bridge looks like. J. W. Speight is shown operating the bridge, while Lloyd Nicholas prepares a wire sample.

has an accuracy of about  $1/25$  of one per cent. On the other hand, the Kelvin bridge measures from one ohm down to  $1/1,000,000$  of an ohm. This instrument also has an accuracy of approximately  $1/25$  of one per cent.

#### Infinitesimal Resistance

A short time ago the standardizing lab at Strachan Avenue was called upon by a local manufacturer to measure the resistance of a shunt. There was nothing unusual about this, except that this particular shunt was designed to carry 30,000 amperes, weighed 1,000 pounds and had a resistance of only 1.66 millionths of an ohm. To measure such a resistance value accurately was an undertaking which demanded extreme care, skill and diligence on the part of the technicians. Of three such shunts tested, one was found to be faulty, and thus the manufacturer was able to correct it before making shipment to a distant plant.

The art of electrical measurement has progressed rapidly and now finds application in many other fields. Take for instance the overhead wire the Commission uses in its transmission lines. Surprisingly, there is actually more danger to these lines on a quiet spring day when a gentle breeze is blowing than during an electrical storm. The reason given for this is that the steady gentle breeze causes mechanical vibrations to develop and, in time, the conductors break. The development of remedies for this breaking of wires involved the use of intricate electrical devices for measuring and automatically recording vibrations, 24 hours a day.

As a result of these tests, which have been carried on for the past five or six years, dampers are now used to





# RURAL ELECTRIFICATION AS POST-WAR PROJECT

**R**URAL electrification looms as one of the all-important projects on the Canadian list of post-war plans.

This fact was brought out during a broadcast sponsored by the National Farm Radio Forum recently when attention was directed to "this modern miracle of electricity" and the drudgery and inconvenience it can remove from farm work and farm living.

Statistics mentioned during the broadcast showed that, according to the 1941 Canadian census figures, only 141,000 farm homes out of a total of 729,000 are equipped with electricity. In that year, Hydro operated approximately 20,000 miles of rural lines, distributing power to some 130,000 hamlet and rural consumers, including over 63,000 farms. This meant that approximately 37 percent of the farms in Ontario were electrified at that time. Correspond-

ing figures mentioned in connection with other provinces were British Columbia, 36 percent; Nova Scotia, 26.2 percent; Quebec, 23.6 percent; and New Brunswick, 18.6 percent, while Prince Edward Island had 6.2 percent of its farm dwellings equipped with electricity in 1941.

It was pointed out that the higher percentage in some provinces could be attributed to the fact that smaller farms were easier to serve. Thus, in the Prairie provinces, which has large acreage farms, the figures are: Manitoba, 7.3 percent; Alberta, 6 percent and Saskatchewan, 4.9 percent.

"There's a wide field for development there," one of the forum speakers pointed out. "Think of the activity in connection with the electrification of these farm homes," he said, "only 20.1 percent of the farm dwellings in Canada in 1941 had electricity. The installation and manufacture of the electrical equipment involves a tremendous amount of work, and the farmers certainly need the proper equipment to lighten their work. Farmers should be prepared for the coming of post-war rural electrification."



**AN AMPLE** supply of fresh water, for his livestock and for general use around the farm as well as in his home, is assured by the shallow well water pump (above), installed by this farmer, and operated by Hydro power.



**WHEN** A pail of hot water is needed in a hurry this type of electric hot water heater comes to the rescue. When the handle of the pail is hung over the hook the weight of the pail snaps the switch and the element heats the water in a jiffy.

**THIS FARMER** is making a periodic check of the electrical equipment on his farm. Here he is shown examining his deep well pump which supplies an abundance of water for both the barn and the house.







## CHAIRMAN AT OTTAWA

A native of London, Ontario, **FRANK H. PLANT**, chairman of the Ottawa Hydro-Electric Commission, was born in 1883. Receiving his education in London, he started his career as a printer's devil with the London Advertiser. Today, he is president and managing director of F. H. Plant Limited.



Mr. Plant has had many years' experience in municipal affairs, having been alderman in 1917 and 1918; controller in 1919 and 1920, and mayor from 1921 to 1923. In 1925 he returned to the city hall as a controller, which office he held until 1929, and the following year he was elected mayor by acclamation. In 1936 he was appointed commissioner by the city council, and the following year was elected chairman, which office he still holds.

Taking a keen interest in sports, Mr. Plant was president of Ottawa Baseball Club for eight years, and of the Ottawa Amateur City Hockey League for 18 years. For the past 20 years he has been president of the Ottawa Kennel Club. He also finds time to get in a little golf.

## MEET THOMAS HEWITT

Secretary-treasurer **THOMAS HEWITT** has been with the Ottawa Hydro-Electric Commission for the past 31 years. In that time he has been works accountant, assistant secretary-treasurer, and in 1938 he was appointed secretary-treasurer.



He was born in Carleton County and received his early education there, and later attended school at Ottawa.

Mr. Hewitt takes a keen interest in collecting antique china and is very proud of his collection of old moustache cups. He also has a very rare piece of china—a Cape de la Monte plaque, dating back to 1800.

Mr. Hewitt's ancestors have been associated with the Ottawa district for a good many years, his grandfather having come from the north of Ireland 102 years ago and settled at Richmond, about 15 miles west of Ottawa, then called Bytown.

## OTTAWA'S MAYOR

Mayor **J. E. STANLEY LEWIS** has been an ex-officio member of the Ottawa Hydro-Electric Commission since 1936. Previous to that he was alderman in 1930, and controller from 1931 to 1935, and the following year was chairman of the Commission.



Born at Ottawa in 1888, Mr. Lewis received his education, including an honorary degree of Doctor of Laws from the Ottawa University.

While at school he was active in cross country running, paddling and football. Now his interests lie in gardening and photography.

## APPOINTED GENERAL MANAGER

**J. E. TECKOE, Jr.**, who was recently appointed general manager of the Galt Public Utilities Commission, was, for five years, superintendent of the Tillsonburg Public Utilities Commission, and from 1923 until 1939, he served in various capacities at the Niagara Falls Hydro-Electric Commission.



Mr. Teckoe is 41 and is a member of the Association of Professional Engineers of the Province of Ontario. He is married, and has two children attending high school. He has taken an active interest in A.M.E.U. affairs, having served on several committees, and as Niagara District director in 1943.

His father, J. E. Teckoe, is manager of the Niagara Falls Hydro-Electric Commission, and the combined service of father and son with Hydro exceeds 52 years.


## J. R. ROBERTSON PASSES

**JAMES R. ROBERTSON**, who was the oldest member of the Carleton Place Public Utility Commission, died recently after a long period of ill health.

Mr. Robertson was keenly interested in municipal affairs and served on the town council. In 1925 he was elected to the commission, having been chairman in 1931 and 1932.

He is survived by three sons and two daughters.





# AROUND THE HYDRO CIRCUIT

## STEWART WATT PASSES

JOHN STEWART WATT, aged 39, secretary and superintendent of the Board of Light and Heat Commissioners at Guelph, died on July 20th following a short illness.



Mr. Watt was one of Guelph's popular citizens, and was widely known and highly respected in Hydro circles throughout Ontario. He was an active member of the Association of Municipal Electrical Utilities and also represented Guelph at the sessions of the Ontario Municipal Electric Association, while he was a member of the Electric Meter Men's Association and a past vice-president of the Niagara District Electric Club.

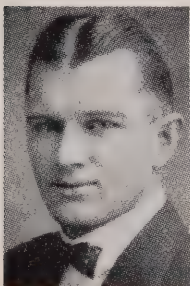
When he left school in 1919, Mr. Watt became associated with the light and heat department and, in 1935, was appointed assistant superintendent. Upon the death of J. J. Heeg, the following year he became superintendent of the department and secretary of the Commission.

Mr. Watt, who was a native of Brucefield, Huron County, is survived by his widow, three sons, a daughter, two brothers and two sisters.

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## MANAGER AT FORT WILLIAM

A. W. H. TABER, formerly manager of the North Bay Hydro-Electric Commission, has been appointed manager of the Fort William Hydro-Electric Commission, succeeding Charles J. Moors who died recently.



Mr. Taber, who is 42 years of age, has had extensive Hydro experience, having served for eleven years with The Hydro-Electric Power Commission of Ontario. Before going to North Bay as manager, he was a rural superintendent at Sudbury, and, prior to that, had been engaged in maintenance work at Owen Sound.

A native of Brockville, he is married and has two children, Walter and Mary Lou, who are both attending school.

## MANAGER AT OTTAWA

STANLEY WARREN CANNIFF, general manager of the Ottawa Hydro-Electric Commission, has a long record of Hydro service, thirty years in fact. He originally joined the staff of the Ottawa Commission as a substation and testing engineer. In 1930 he became assistant general manager, and in 1937, was appointed general manager.

This year he was elected president of the Association of Municipal Electrical Utilities.

Mr. Canniff was born and educated in Napanee. Following school graduation, he took a four-year test course with the Canadian General Electric Company, and remained with this company for another three years.

When at school, he was particularly active in sports, having played rugby, tennis, basketball and hockey. Now he goes in for curling, and has won some trophies. He is an enthusiastic fisherman and still talks about the black bass he caught nine years ago. It weighed 5 pounds, 12 ounces. He is also a collector of old china, having some pieces in his collection dating back two and three hundred years.

It is interesting to note that Mr. Canniff's forebears were United Empire Loyalists, who settled at Cannifton, near Belleville.

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## LOST IN ACTION

Pilot Officer RICHARD H. SPARLING is reported missing following a raid over France, and Warrant Officer CARL J. McCONVEY is reported killed on active service in France. Both were formerly members of the H.E.P.C. property department staff. After leaving North Toronto Collegiate, P.O. Sparling joined the H.E.P.C. in September, 1941, enlisting in the R.C.A.F. in July of the following year. W.O. McConvey joined the H.E.P.C. staff in February, 1940, and enlisted in the R.C.A.F. in January, 1942.

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## MEDAL AND CERTIFICATE AWARDED

For saving the life of seven-year-old Edward Wager, who had been rendered unconscious by an electric shock at the Crow River transmission station, James Cullen, assistant patrolman at that station, was presented with the Canadian Electrical Association medal and certificate. The presentation was made by John MacLellan, of the H.E.P.C. employees relations department before a gathering of Commission employees and members of the staffs of Central Patricia and Pickle Crow gold mines, and other members of the community.



**D**O you ever feel that your imagination has gone on vacation when it comes to meal planning? Most of us do from time to time and this is when meal-time interest slumps and the whole family seems to develop finicky food fads.

These days, when we look through the kitchen windows, we can see the garden alive with colourful bloom and an abundance of inviting green produce. And so, we suggest that you use perishable garden food as often as you like while it is fresh, but to maintain interest, try "a special" each day of the week.

**SUNDAY:** Now, there's a morning for an omelet and here's one that makes history. Heat two tablespoons of fat (preferably bacon or meat dripping) in a glass, heat-resistant, frying pan and let stand until the mixture is ready. Beat six eggs, just enough to blend the yokes and whites, add one teaspoon of salt, a dash of pepper, and one-third cup of milk. Beat again and pour into pan. Cook on "medium" electric element until the omelet is golden brown. Spread with a thin coating of marmalade and fold in half. Sprinkle with a bit of grated cheese and cover until the cheese melts. Serve hot. While the omelet is cooking heat, a third loaf of bread in wax paper, then pull bread apart with forks. Brush each piece lightly with

butter, place on a cookie sheet and crisp in an electric oven at 450 degrees. It's delicious.

**MONDAY:** This is the day for a hamburger. Mix minced round steak with salt and minced sweet pepper, and shape into small flat cakes and broil until brown. Make potato cakes of the same size. Spread burgers with chili sauce and place potato cakes on top. Place the broiling pan lower in the oven and heat the potato cakes until hot. Meanwhile, make a quick tomato sauce, using two cups of tomatoes, seasoning and thicken with two biscuits rolled fine.

**TUESDAY:** A pie, that ever popular dessert, will raise the family's mealtime spirits much as a new hat gives a lift to a lady's morale. And what of those few scraps of pastry left over after rolling out the crust? Cheese straws will make to-morrow's salad enticing, and add a new note to the lunch box or distinction to chilled vegetable juices. If the cookie jar is depleted, pastry trimmings treated with sugar 'n spice and baked as either straws or cookies make a fine accompaniment to a fruit dessert. Roll out trimmings flat, one on top of the other, to make the flaky extra tidbits.

**WEDNESDAY:** If you are making a fruit salad, be sure to chill the fruit thoroughly in your electric refrigerator. Before serving, prepare the fruits in servings which are easy to eat. A melon fruit cup is ready to eat when diced pieces of melon are placed on a fruit dish and topped with cottage cheese mixed with maraschino cherries.

**THURSDAY:** If this is sandwich day at your house, here is a suggestion. Butter a slice of enriched flour bread, spread with a mixture of minced ham moistened with mayonnaise, place a thin piece of cheese on top of this and cover it with a very small amount of jam. Top with another slice of buttered bread and serve with green onions with coffee as the beverage.

If you want a sandwich spread that you can keep in the refrigerator ready to use at a moment's notice, try this:

*(Continued on page 23)*

IT'S REALLY easy to can fruits and vegetables when you've acquired the "know how." This was the impression made upon a gathering of Hydro victory gardeners in the auditorium of the H.E.P.C. building recently when Edith Emma Muir, Hydro Home Economist, (right), gave a demonstration.





# HYDRO Rose Show



ONE would not need to be a connoisseur in the field of flora to appreciate the display of flowers at the recent Rose Show held under the auspices of the horticultural section of the Ontario Hydro-Electric Club. Although roses of all types and shades predominated, there were other lovely flowers as well. In the above illustration, H. R. Hill, secretary, horticultural section; R. M. Laurie, past-president O.H.E. Club, and E. V. Butt, supervisor of Rose Show, discuss the merits of the "best" rose, peony and basket won by T. C. James, H. L. Wagner and W. H. Carr respectively. The illustration on the left shows a general view of prize winning exhibits.

Prize winners were: J. F. MacLaren, five "firsts" and two "seconds"; T. C. James, four "firsts" and two "seconds"; H. L. Wagner, four "firsts"; W. H. Carr, three "firsts" and one "second"; H. E. Brandon, two "firsts" and two "seconds"; A. L. Kenardy, two "firsts" and one "second"; R. Wilson, two "firsts"; O. H. Kleiser, one "first" and four "seconds"; R. H. Whatley, G. C. Thomas and H. R. Hill, one "first" each; F. R. Gregory, two "seconds"; Edith Thomas, two "seconds"; Tessa MacPherson, Marjorie Petrie, H. H. Leeming and E. Pickles, one "second" each.



## QUARTER CENTURY CLUB

A combined total of over 14,000 years' service to the people of Ontario is represented by the names on the membership roll of the Ontario Hydro Quarter Century Club.

Among the names added to that roll this year, it is announced, is that of David Forgan, H.E.P.C. construction engineer, on whose desk now sits a handsome pen set, complete with clock and calendar. A gold plate on the set bears the following inscription: "Presented to David Forgan on the completion of 25 years' service with The H.E.P.C. by his friends on the staff. July 1, 1944."

## FIRST LIGHTING PLANT

Cornwall, Ontario, was the home of Canada's first industrial lighting plant, which went into service in 1883. The installation was made in the weaveshed of Canadian Cottons Limited, the equipment having been designed and constructed by Thomas A. Edison.

## O.M.E.A. MEETINGS

Annual meeting of the Georgian Bay Municipal Electric Association, District No. 2, is to be held in Barrie on September 21, according to information received from **KATHLEEN CICERI**, secretary-treasurer of the Ontario Municipal Electric Association. The business meeting will commence at 1.30 p.m. at the Oddfellows Temple, Collier Street, and dinner will be served at 6.30 at the Trinity Church Parish Hall.

The date set for District No. 6 is September 27, at the Wellington Hotel, Guelph. Morning sessions are scheduled to start at 10 a.m.

## "PRESUMED DEAD"

Flying Officer **RONALD G. CARTER, D.F.C.**, of the H.E.P.C. property department, and Flight Lieutenant **A. C. HARDING, D.F.C.** of the operating department, who had been reported missing, are now "presumed dead," according to official advices.

# Lighter Lines



"Why do I have to open my mouth, if I'm going to get a hair-cut?"

\* \* \*

"The Smiths seem to be getting along better these days."

"Yes, he visited his old home town last month and saw the girl he was in love with twenty years ago."

\* \* \*



"Isn't there some OTHER way of being popular when you grow up?"

The serious minded young lady was returning home from her first aid class when she saw a man lying face down on the sidewalk. His head was cradled on one arm and the other was twisted under him. Without a moment's hesitation she got down and started to apply her newly learned lessons.

"Lady," said the victim after a few moments, "I don't know what you're doing, but please stop tickling me. I'm trying to hold a lantern for this fellow down the manhole."

\* \* \*

"How did you lose your job at the dress shop, my dear?"

"Just because of something I said. After I had tried twenty dresses on a woman, she said, 'I think I'd look nice in something flowing,' and so I asked her why she didn't jump in the river."

\* \* \*

An old farmer and his wife were standing before their pigsty looking at their only pig, when the old lady said: "Say, John, it will be our silver wedding tomorrow. Let's kill the pig."

John replied with disgust: "What's the use of murdering the pig for what happend 25 years ago?"

\* \* \*

One of the guests turned to a man by his side to criticize the singing of a woman who was trying to entertain them.

"What a terrible voice! Do you know who she it?"

"Yes," was the answer. "She's my wife."

"Oh, I beg your pardon. Of course, it isn't her voice, really. It's the stuff she has to sing. I wonder who wrote that awful song?"

"I did," was the answer.

\* \* \*

"How did Johnny like his new teacher?"

"He has a rather painful impression of her."



"Oh, Mom won't care. She's broadminded!"

\* \* \*

There was an advertisement for a young woman to do light housework. A city girl applied for the job.

"I think the sea air will do me good," she wrote. "Will you please say in your reply where the lighthouse is?"

\* \* \*



"Aren't you overdoing this thing?"



## HYDRO HOME FORUM

(Continued from page 20)

Put a half pound of cooked meat through the food chopper, add one minced dill pickle, seasoning, and four, mashed, hard-cooked eggs. Mix together with one tablespoon of French mustard and enough vinegar to moisten. This filling is very satisfying and a bit sharp.

If you want carrot curls that really curl, slice the carrot paper-thin, lengthwise, and place in ice-cold water in a covered container in the refrigerator for half an hour. This is a cold wave, permanent curl.

**FRIDAY:** Fresh muffins for the family and made with honey. Substitute half of the amount of sugar in your regular muffin recipe for honey. Stir muffin batter only until the whiteness of the flour disappears (muffins can't stand a beating). Cook honey-muffins in an electric oven at 425 degrees for about twenty-five minutes.

**SATURDAY:** Ever make a jar of lemon sauce for the weekend? It fills tart shells; it spreads crackers; it tops or fills a cake; it even does for a sauce for ice cream. Use a reliable recipe, but be sure to cook the corn starch mixture thoroughly. Add lemon after the sauce has been removed from the electric element in order that the flavour of lemon is retained.

Thus, it is not necessary to "stretch" one's imagination these days. Use the fruits and vegetables in season to a great extent, and keep in mind the value of daily foods such as milk, meat, whole grain cereals, potatoes, two vegetables, and fruit. Make a special effort to serve one dish each day that will invite folks to be on time for the next meal. There will be no secret society if you cook the day's attraction "to a turn" and serve it attractively.

### Take a Tip

Stains on summer clothes may be removed at home if treated immediately, using the following steps: First, pour boiling water from a height and if it is not removed treat according to its origin and the material. Only a few drops of stain remover should be applied to the stain. Rinse material. If stain is stubborn, hold the stain in steam over the spout of a boiling kettle. Apply "remover" again.

1. For berry stains use javelle water on white cotton, linen, or rayon. Sponge coloured cotton, linen, or rayon with warm water before applying lemon juice or peroxide.

2. Mercurochrome stains are removed by treating all fabrics with wood alcohol, then vinegar, and then wood alcohol again.

3. Mildew left for any length of time is almost impossible to remove. Wash as soon as noticed in hot, soapy water, then put into javelle water and oxalic acid solution (3 or 4 tbs. for quart of water) alternately.

4. Grass stains on white cotton, linen, or rayon may be removed with javelle water or peroxide, but use wood alcohol on coloured fabrics.

5. Lipstick: Sponge marks on cottons and linens with a stain remover or carbon tetrachloride; on all coloured fabrics, work in cold cream, then follow with carbon tetrachloride.

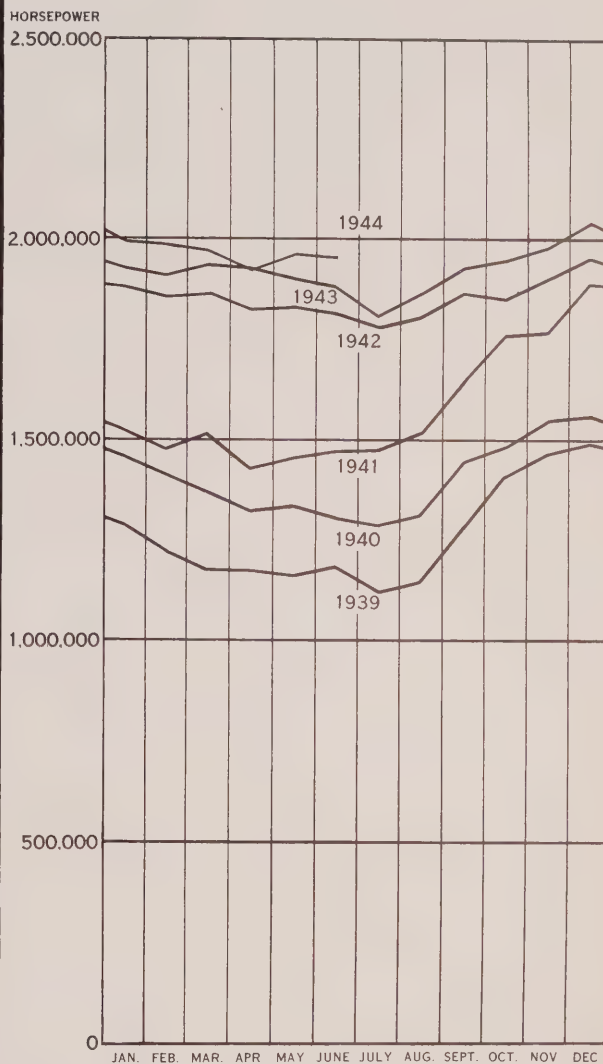
6. Paint may be removed by soaking stain in turpentine or carbon tetrachloride.

All stain removing agents should be removed by sponging or washing the garment, then press, using absorbent cloth over cleaned material.

## SOUTHERN ONTARIO SYSTEM

EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

### PRIMARY LOAD



### PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	JUNE, 1944	JUNE, 1943	
SOUTHERN ONTARIO SYSTEM . . .	1,956,924	1,871,059	+ 4.6
THUNDER BAY SYSTEM . . . . .	101,206	103,706	- 2.4
NORTHERN ONTARIO PROPERTIES . . .	200,131	200,203	0.0
TOTAL . . . . .	2,258,261	2,174,968	+ 3.8

### PRIMARY AND SECONDARY LOADS

SOUTHERN ONTARIO SYSTEM . . .	2,040,828	1,936,877	+ 5.4
THUNDER BAY SYSTEM . . . . .	115,147	111,422	+ 3.3
NORTHERN ONTARIO PROPERTIES . . .	241,699	236,932	+ 2.0
TOTAL . . . . .	2,397,674	2,285,231	+ 4.9

# MUNICIPAL LOADS, MAY, 1944

## SOUTHERN ONTARIO SYSTEM

### NIAGARA DIVISION

(25-Cycle)

	H.P.	Popula- tion
Acton	1,530	1,903
Agincourt	205	P.V.
Ailsa Craig	136	487
Alvinston	97	649
Amherstburg	1,013	2,704
Ancaster Twp.	390	V.A.
Arkona	61	403
Aurora	1,363	2,821
Aylmer	864	1,985
Ayr	243	760
Baden	538	P.V.
Beachville	762	P.V.
Beamsville	446	1,227
Belle River	160	836
Blenheim	495	1,873
Blyth	136	662
Bolton	228	629
Bothwell	118	683
Brampton	2,777	6,157
Brantford	21,947	31,622
Brantford Twp.	1,064	V.A.
Bridgeport	140	P.V.
Brigden	88	P.V.
Brussels	139	784
Burford	296	P.V.
Burgessville	52	P.V.
Burlington	1,585	3,925
Burlington Beach	401	1,474
Caledonia	332	1,430
Campbellville	38	P.V.
Cayuga	111	700
Chatham	7,120	17,184
Chippawa	333	1,228
Clifford	111	491
Clinton	700	1,879
Comber	134	P.V.
Cottam	71	P.V.
Courtright	45	355
Dashwood	113	P.V.
Delaware	75	P.V.
Delhi	386	2,430
Dorchester	95	P.V.
Drayton	141	528
Dresden	438	1,525
Drumbo	110	P.V.
Dublin	64	P.V.
Dundas	3,057	5,245
Dunnville	1,330	3,916
Dutton	256	830
East York Twp.	7,993	41,578
Elmira	1,294	2,069
Elora	460	1,185
Embro	145	420

	H.P.	Popula- tion
Erieau	141	281
Erie Beach	11	21
Essex	517	1,886
Etobicoke Twp.	7,540	V.A.
Exeter	703	1,654
Fergus	1,341	2,759
Fonthill	168	860
Forest	595	1,562
Forest Hill	6,639	12,172
Galt	11,162	15,126
Georgetown	1,820	2,452
Glencoe	193	763
Goderich	1,770	4,674
Granton	77	P.V.
Grimsby	791	1,988
Guelph	11,524	23,074
Hagersville	963	1,524
*Hamilton	155,135	164,719
Harriston	462	1,292
Harrow	553	1,092
Hensall	174	686
Hespeler	2,845	2,938
Highgate	91	322
Humberstone	563	2,831
Ingersoll	3,501	5,757
Jarvis	176	513
Kingsville	559	2,453
Kitchener	27,116	35,456
Lambeth	120	P.V.
LaSalle	282	907
Leamington	1,675	6,048
Listowel	1,518	2,984
London	38,270	77,105
London Twp.	488	V.A.
Long Branch	1,202	4,258
Lucan	182	643
Lynden	128	P.V.
Markham	390	1,175
Merlin	76	P.V.
Merritton	11,624	2,916
Milton	1,361	1,915
Milverton	419	994
Mimico	2,511	8,354
Mitchell	809	1,670
Moorefield	51	P.V.
Mount Brydges	96	P.V.
Newbury	32	288
New Hamburg	660	1,441
Newmarket	1,940	3,800
New Toronto	11,987	9,469
Niagara Falls	10,445	20,371
Niagara-on-the-Lake	783	1,764
North York Twp.	9,901	V.A.
Norwich	412	1,301

	H.P.	Popula- tion
Oil Springs	172	541
Otterville	98	P.V.
Palmerston	587	1,400
Paris	1,912	4,604
Parkhill	202	1,029
Petrolia	963	2,768
Plattsville	143	P.V.
Point Edward	1,693	1,199
Port Colborne	1,912	6,928
Port Credit	863	1,934
Port Dalhousie	1,012	1,599
Port Dover	459	1,790
Port Rowan	97	700
Port Stanley	605	824
Preston	4,179	6,656
Princetown	152	P.V.
Queenston	147	P.V.
Richmond Hill	493	1,295
Ridgetown	571	1,986
Riverside	1,220	5,235
Rockwood	146	P.V.
Rodney	136	758
St. Catharines	28,747	34,541
St. Clair Beach	95	138
St. George	182	P.V.
St. Jacobs	295	P.V.
St. Marys	1,598	4,009
St. Thomas	8,053	17,045
Sarnia	11,152	18,599
Scarborough Twp.	4,656	V.A.
Seaforth	922	1,782
Simcoe	2,662	6,340
Smithville	170	P.V.
Springfield	57	382
Stamford Twp.	2,802	8,275
Stoney Creek	210	933
Stouffville	333	1,198
Stratford	7,488	17,163
Strathroy	1,650	2,834
Streetsville	225	701
Sutton	192	949
Swansea	2,958	6,907
Tavistock	708	1,080
Tecumseh	371	2,391
Thamesford	232	P.V.
Thamesville	158	816
Thedford	131	598
Thorndale	92	P.V.
Thorold	2,196	5,284
Tilbury	1,432	1,923
Tillsonburg	1,349	4,602
Toronto	341,037	657,612
Toronto Twp.	3,312	V.A.

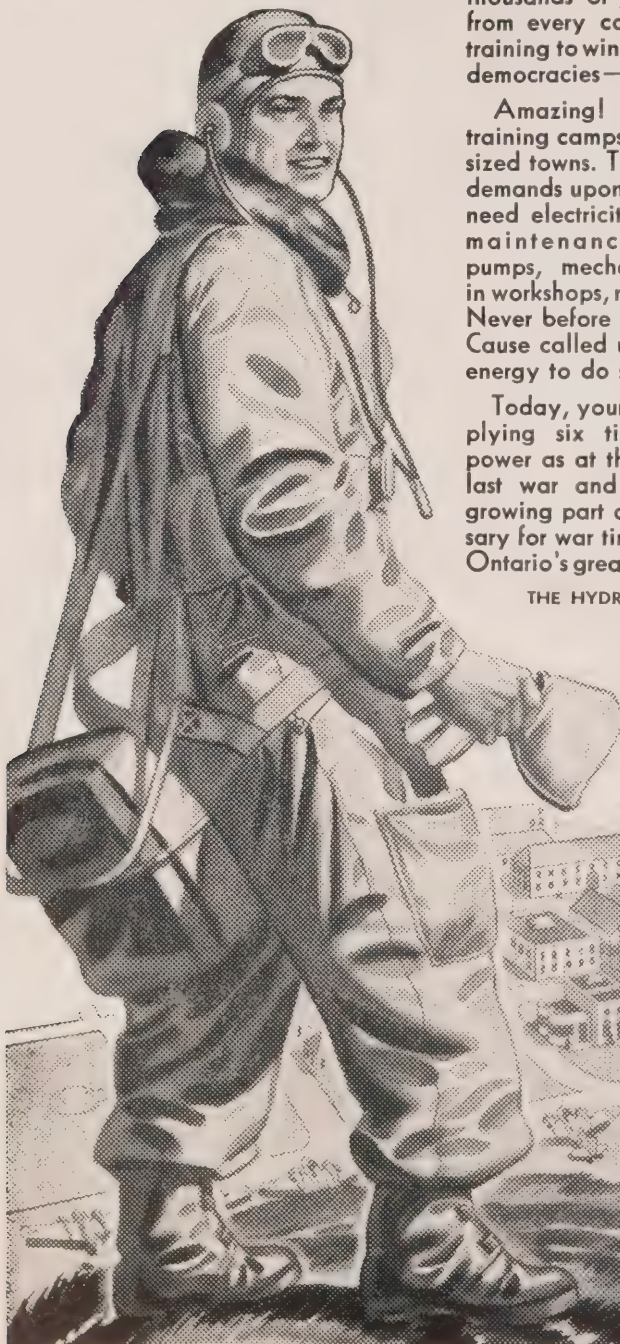
\* Industrial load 66 2/3 Cycle.



## MUNICIPAL LOADS, MAY, 1944

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Wallaceburg	4,208	4,802	Neustadt	46	431	Lakefield	344	1,301
Wardville	36	221	Orangeville	703	2,558	Lanark	79	686
Waterdown	232	867	Owen Sound	5,865	13,559	Lancaster	42	570
Waterford	439	1,294	Paisley	103	530	Lindsay	3,622	8,345
Waterloo	5,829	8,968	Penetanguishene	1,000	4,177	Madoc	180	1,130
Watford	391	1,023	Port Carling	130	520	Marmora	120	1,004
Welland	10,614	14,899	Port Elgin	558	1,415	Martintown	37	P.V.
Wellesley	133	P.V.	Port McNicoll	113	950	Maxville	109	811
West Lorne	235	768	Port Perry	304	1,175	Millbrook	95	749
Weston	4,641	6,333	Priceville	10	P.V.	Morrisburg	286	1,484
Wheatley	209	761	Ripley	89	420	Napanee	1,402	3,241
Windsor	53,554	118,040	Rosseau	23	305	Newcastle	168	701
Woodbridge	621	1,110	Shelburne	233	1,053	Norwood	132	710
Woodstock	8,183	12,339	Southampton	549	1,467	Omeme	176	630
Wyoming	74	538	Stayner	309	1,106	Orono	92	P.V.
York Twp.	19,773	77,175	Sunderland	80	P.V.	Oshawa	17,282	26,610
Zurich	141	P.V.	Tara	109	510	Ottawa	37,862	150,816
(66 2/3-Cycle)			Teeswater	151	973	Perth	1,809	4,197
Bronte	148	P.V.	Thornton	37	P.V.	Peterborough	11,623	24,977
Oakville	1,160	3,369	Tottenham	89	532	Pictou	1,221	3,400
Trafalgar Twp.	537	V.A.	Uxbridge	331	1,480	Port Hope	2,354	4,997
GEORGIAN BAY DIVISION			Victoria Harbour	67	979	Prescott	1,574	3,318
(60-Cycle)			Walkerton	1,012	2,534	Richmond	75	428
Alliston	432	1,700	Waubashene	102	P.V.	Russell	70	P.V.
Arthur	146	1,089	Warton	265	1,750	Smiths Falls	3,075	7,741
Bala	130	355	Windermere	25	117	Stirling	330	947
Barrie	4,213	9,559	Wingham	691	2,149	Trenton	5,082	8,183
Beaverton	239	941	Woodville	78	439	Tweed	262	1,181
Beeton	147	617	EASTERN ONTARIO DIVISION			Warkworth	69	P.V.
Bradford	237	1,041	(60-Cycle)			Wellington	202	948
Brechin	57	P.V.	Alexandria	181	1,976	Westport	87	725
Cannington	217	761	Apple Hill	42	P.V.	Whitby	1,409	4,236
Chatsworth	84	333	Arnprior	1,229	4,019	Williamsburg	85	P.V.
Chesley	596	1,812	Athens	106	626	Winchester	390	1,017
Coldwater	178	545	Bath	37	325	THUNDER BAY SYSTEM		
Collingwood	2,735	6,249	Belleville	7,788	15,498	(60-Cycle)		
Cookstown	97	P.V.	Bloomfield	120	636	Fort William	15,167	30,370
Creemore	161	661	Bowmanville	2,679	3,850	Nipigon Twp.	194	V.A.
Dundalk	236	686	Brighton	390	1,462	Port Arthur	22,320	24,217
Durham	426	1,874	Brockville	4,903	11,112	NORTHERN ONTARIO		
Elmvale	158	P.V.	Cardinal	343	1,602	PROPERTIES		
Elmwood	60	P.V.	Carleton Place	1,901	4,143	Nipissing District		
Flesherton	55	452	Chesterville	302	1,094	(60-Cycle)		
Grand Valley	137	645	Cobden	106	643	North Bay	4,631	16,013
Gravenhurst	1,140	2,261	Cobourg	2,227	5,907	Patricia District		
Hanover	1,391	3,190	Colborne	234	960	(60-Cycle)		
Holstein	16	P.V.	Deseronto	238	1,002	Sioux Lookout	299	1,967
Huntsville	1,159	2,943	Finch	116	396	Sudbury District		
Kincardine	702	2,483	Frankford	151	1,095	(60-Cycle)		
Kirkfield	26	P.V.	Hastings	100	823	Capreol	257	1,660
Lucknow	395	856	Havelock	135	1,103	Sudbury	8,874	35,812
Markdale	172	776	Iroquois	264	1,123			
Meaford	728	2,759	Kemptville	375	1,230			
Midland	5,334	6,754	Kingston	14,505	29,545			
Mildmay	153	764						
Mount Forest	476	1,936						

# Victory IS IN THE MAKING AND **HYDRO** SPEEDS THE WORK!



● Right here in Ontario, thousands of young patriots from every continent are in training to win Victory for the democracies—from the Air!

Amazing! Some of our training camps are like good sized towns. They make new demands upon Hydro. They need electricity for lighting, maintenance, airfields, pumps, mechanisms, radio; in workshops, rooms, kitchens. Never before has so great a Cause called upon electrical energy to do so much.

Today, your Hydro is supplying six times as much power as at the close of the last war and a large and growing part of this is necessary for war time production. Ontario's great aircraft indus-

tries are powered by Hydro, also factories and foundries making all manner of military equipment. This war is not only mechanized but electrified!

You are, of course, proud that your Hydro System is playing so great a part in the victory program. Of course, you will economize in your use of electric energy for all peace-time pursuits—and forego for a while further extensions of electric service. With all of us, war needs must come first!

#### Electrical Thrift Hints

Always use the heating element best suited to the work in hand. That saves current, prevents boil-overs. Use automatic controls as directed. Don't leave elements on 'high' a moment longer than necessary. Have your dealer or local 'Hydro' put your appliances in good order.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

BLOOD DONORS ON THE HOME FRONT  
AID BLOOD GIVERS ON THE BATTLE FRONT

REMEMBER—It's YOUR  
**HYDRO**  
SYSTEM—  
OUR WAR EFFORT RELIES ON IT...  
YOUR COMMUNITY DEPENDS ON IT...  
YOUR SUPPORT MAKES IT STRONG





# HYDRO *News*

LADIES OF THE LINE

VOL. 31

SEPTEMBER, 1944

NUMBER 9



# HYDRO *Lightens* The Way !

## *Electricity* is essential ! to commerce ■

● Imagine, if you can, a towering skyscraper deprived completely of electricity. It would be nothing but a bleak, dark block of stone, steel and concrete . . . lifeless, unserviceable.

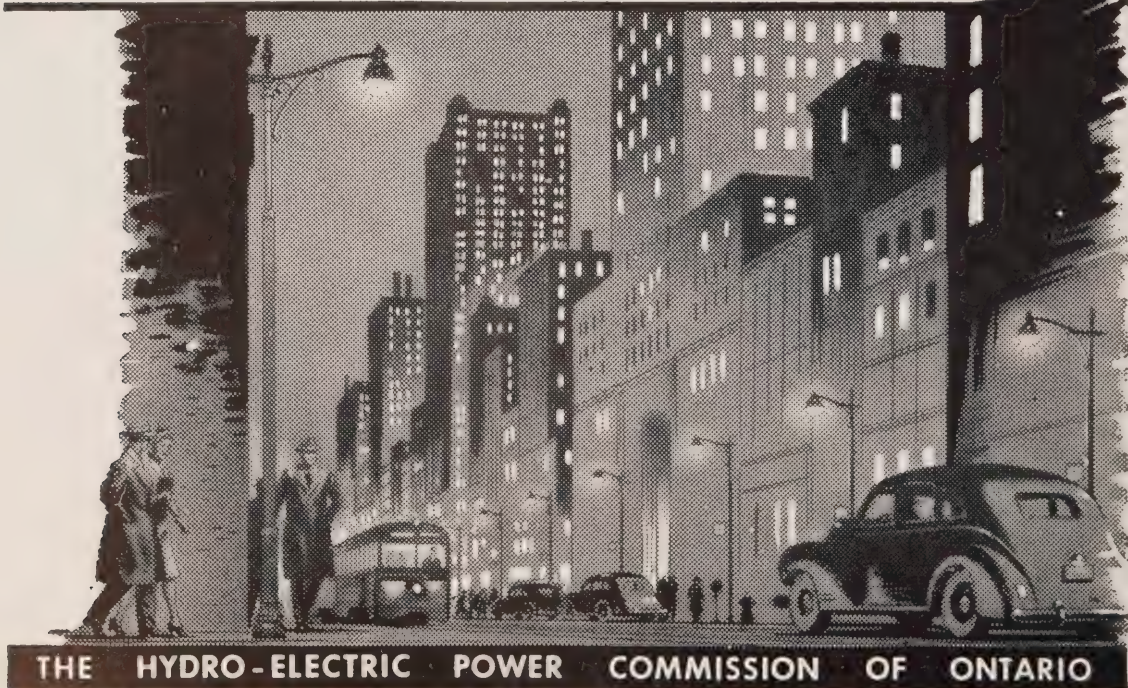
It is Hydro that puts life into skyscrapers, warehouses and factories, or any other building. For electricity transforms darkness into light . . . moves elevators swiftly and silently . . . performs the hundred tasks that bestow upon a building the throbbing pulse of life.

Hidden in the walls of tall buildings are hundreds of miles of wiring . . . a veritable network, travelling from a master switchboard to

wherever light and power are needed. Busy telephones . . . chattering teletype equipment . . . business machines, and other mechanical, time-saving devices that serve the many needs of commerce . . . are powered by electricity.

In Ontario . . . in business and home . . . in industry and on the farm . . . Hydro lightens the way. It powers the machines that produce the goods we need . . . it brings us entertainment . . . it makes our work-day easier, our life more comfortable.

Plan for better living and more leisure after Victory, by taking full advantage of the benefits that can be yours through the use of electricity.



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO





## THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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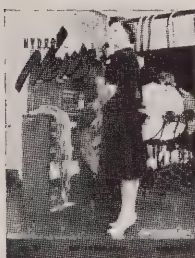
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### The Front Cover



ENTITLED "Ladies of the Line," this month's front cover illustration was secured at the H.E.P.C. switchboard in the Administration Building, Toronto. In the foreground is Miss I. C. Bauldry, supervisor, while behind her are the four operators who handle approximately 5,000 incoming and outgoing calls each day, or during a working year of 275 days, an estimated 1,375,000 calls.

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Number 9

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## PRESENTATION OF PAINTING

**I**N the south lobby on the main floor of the H.E.P.C. Administration Building hangs an arresting oil painting by the eminent Canadian artist, Owen Staples, O.S.A., who, at a quiet ceremony recently, presented the canvas to the Commission on whose behalf it was accepted by Dr. Thomas H. Hogg, chairman.

Just after the official presentation, the photographer recorded this interesting study of the artist and Dr. Hogg standing before the painting, which is the largest of the Horseshoe Falls done by Mr. Staples, who completed the work in 1930.



## REMEMBER SEPTEMBER

**F**OR those who feel that "the good old summertime" is too hot, too humid and rather fagging, at times, September brings a sense of refreshing exhilaration and a feeling that "it's good to be alive."

It is a month which heralds the Fall, the glorious transformation in Nature's colour scheme, the golden harvest, bright, blood-tingling days, rosy cheeks and another chapter in gridiron history. Fall in the air puts Spring in the step and sounds a call to high adventure in northern forests or at local corn roasts.

But September has also a sombre significance. In 1939, it heralded the march of Hitler's hordes with world conquest as the objective. September, 1940, brings to mind The Battle of Britain when "so many owed so much to so few." By September, 1941, Nazi tentacles were relentlessly reaching over the map of Europe. Then in September, 1942, came El Alamein and the march of Monty's men to turn the tide of the war. By September of the following year, Italy was out of action.

This September, heralding the possibility of victory over Germany in the near future, should prompt a realistic appreciation of the problems to be faced when that time comes.

Shouting is quite in order when the shooting is over, but it will take more than shouting to rebuild, on a sound and enduring foundation, that which Germany and her satellites have torn down.

It's going to take even more than the over-subscription of future victory loans. It will take the united effort and determination of all Canadians in co-operation with the people of the United Nations to make it the kind of victory that will "stick," and to avert another "September, 1939."

## AIMS OF CSA

**T**HERE are organizations which render a maximum of constructive service with a minimum of fanfare or publicity. One such organization is the Canadian Standards Association, formerly known as the Canadian Engineering Standards Association.

An announcement that this association had changed its name and broadened the scope of its service has focused attention upon the character of its operations. As reported in this issue of Hydro News, the

CSA has secured amended letters of patent and is now in a position to extend its service beyond the field of engineering to embrace the standardization of materials and processes of all kinds. Until now, it had not accepted the responsibility for formulating standards outside the engineering field.

The CSA's affiliation with the National Research Council and the fact that it has legislative backing have enabled this organization to publish, to date, 180 standard specifications and codes in the engineering field, while 20 more are about to be published. This information is of the highest importance in setting approved standards for various types of equipment and engineering materials and in providing measures to counteract fire and accident hazards.

In embarking upon this broader field of service, the CSA will be in a position to make a still greater contribution to the economic and industrial progress of Canada in the years to come.

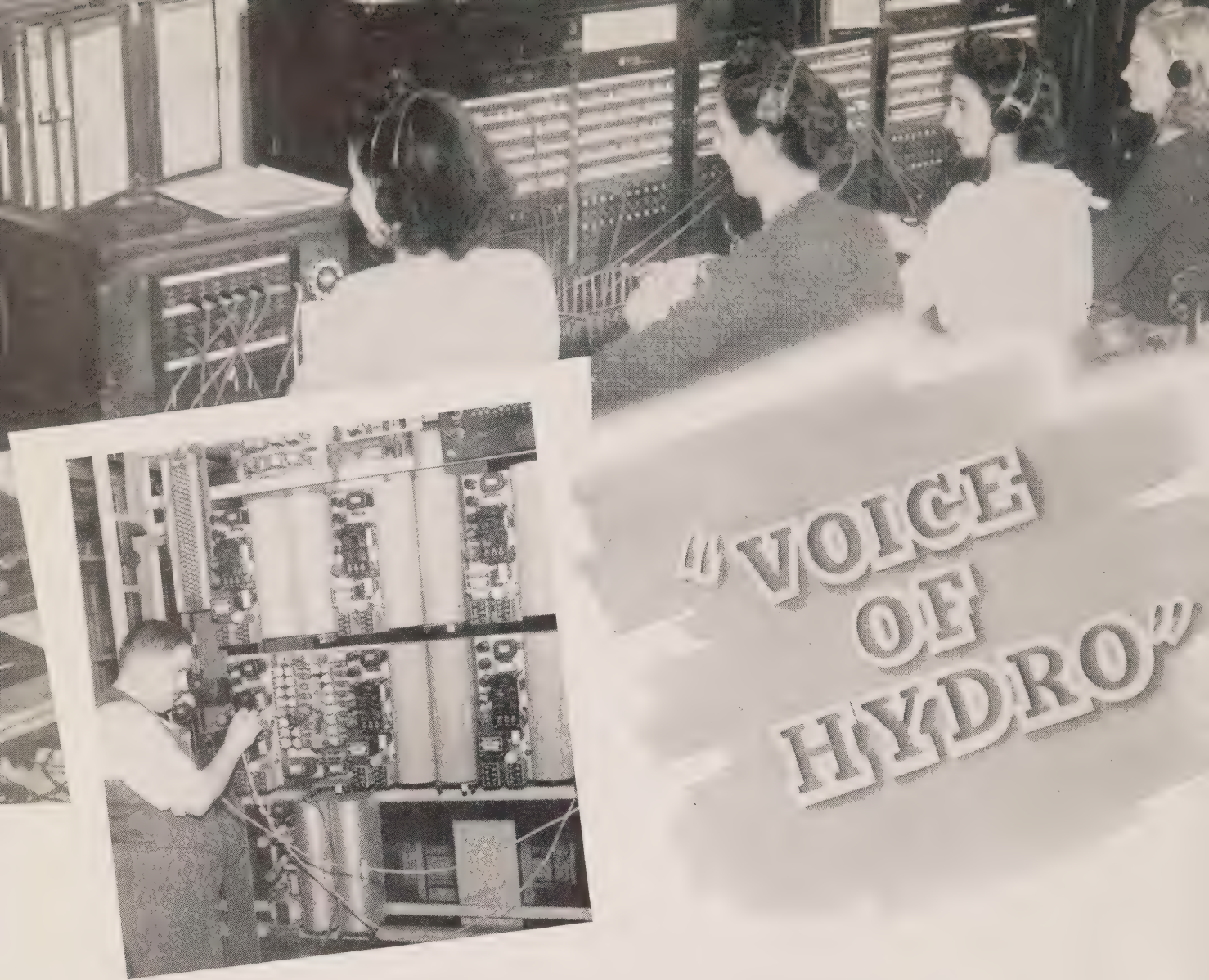
## HYDRO COMMUNICATIONS

**T**ODAY, the telephone, telegraph and radio are so closely interwoven with the entire pattern of daily life that it would be difficult to imagine trying to "get along" without these vital services.

Modern communication facilities, for example, are inseparably linked with the present smooth-working and efficient day-to-day operation of Hydro throughout Ontario.

To speed up and facilitate the many and all-important duties associated with the generation, transmission and distribution of power to industries, homes and farms, the Commission established its own system of communications to supplement regular services. This system was inaugurated on a modest scale and today there are approximately 14,000 miles of Hydro telephone and control circuits in service in the province, while ten short-wave radio stations link the head office in Toronto with various outposts in the far Northland. In this way, the Commission can control its Ontario-wide operation with a maximum of efficiency and with a minimum of expense. Approximately 19,000 calls are handled daily on the entire system.

An interesting insight into the functions and set-up of Hydro's modern system of communications is given in the article, "Voice Of Hydro," published in this issue of Hydro News.



FOUR OPERATORS, Pearl Vincent, Beverley McKay, Helen Dixon and Evelyn Ewart, handle 27 lines to central and nineteen long distance trunk lines of the Hydro's own communications system.

THIS TELEPHONE maintenance man, James Sommerville, is testing the private loud speaker systems installed on the executive floor.

**M**ERCURY, who was credited with having winged feet, appears to have had things pretty much his own way in "running" a one-man communication system for the gods of the ancient world.

But that was about 500 B.C., and the deities of that day didn't have radio, telephone, and telegraph equipment to facilitate their daily business of hurling thunderbolts at one another or at some poor helpless mortal who may have defied their edicts.

While Mercury was apparently the type of fellow whose services would be useful to the hard-pressed owner of today's corner grocery store, he might be at a loss if called upon to act as a substitute for Hydro's modern system of communication.

A perusal of the operating records available at the Toronto administrative office, would kill any such aspira-

tions. Even Mercury might be taken aback to learn that over nineteen thousand administrative and operating calls, representing possibly a hundred and five million words, are handled daily over the entire H.E.P.C. system. He'd be using "double talk" by the time the day was over.

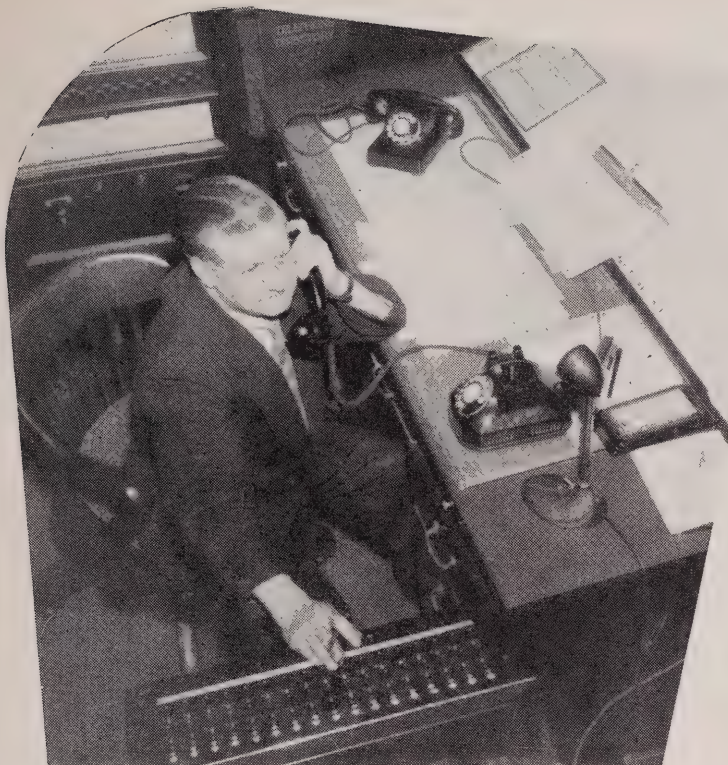
Traffic counts taken at various intervals reveal that there are approximately 8,000 long distance trunk calls and 6,000 automatic exchange telephone calls placed daily over the entire system. In addition, there are an estimated 5,000 calls made daily over Bell Telephone System facilities, Hydro News was told.

#### Handle 27 Trunk Lines

At the switchboard in the H.E.P.C. building are four operators and a supervisor who handle the twenty-seven trunk lines to central on the Bell System and nineteen long distance channels of the Hydro's own communication system.

Located in the basement of the H.E.P.C. administration building is a bewildering maze of wires which are "the innards" of the automatic switching equipment of the Hydro automatic telephone system, interconnecting the





THE OPERATOR at Leaside, Sam Staines, communicates with another station through his cordless key type telephone switchboard. On his desk is the microphone for the public address system and a Bell System telephone.



PAX SWITCHING equipment in the basement of the Toronto head office is given a "going over" by a telephone maintenance man.

offices in the building and other Hydro plants in the city. This modern exchange serves nearly 700 telephones.

Private loud speaking telephone systems installed on the executive floors are unique in that they are co-ordinated with, and form an integral part of, the existing automatic telephone system and that transmission is two-way without the use of manual switching. By the simple flick of a switch, any one of the four master stations may call any one of the twenty-three subscribers assigned to each master station, each of which is connected with a particular key on the panel.

An added feature of this system is the signal given a called party should his line be in use. Even if a line is busy a subdued ring can be heard. In this way, the person using the "automatic" knows that someone on the executive staff is trying to "get through." The subdued ring, which is not loud enough to interfere with the conversation, is maintained as long as the party who is calling keeps the key in the "ringing" position. Immediately the telephone receiver is hung up, the bell rings until it is picked up again.

Special communication features are being adapted to the needs of the rapidly expanding activities of the Hydro system. During the construction of the Niagara river weir FM radio was used for intercommunication between the control tower on the Canadian side, the transit station, and the inspection car when it was sent out on the cableway.

There is an increasing tendency and demand for the use of public address systems in the larger power stations to assist the operating personnel in speeding up maintenance and switching operations. This method of rapid communication has been successful in alleviating difficulties due to the lack of trained personnel for the operation of the larger stations under war conditions.

#### Established Priorities Years Ago

The nucleus of the present Hydro system of communication was the telephone and relay lines constructed with the original power line installation from Niagara Falls. This was further augmented by telephone facilities acquired with the purchase of power plants and transmission companies in the Niagara district. Increasing demand for telephone service soon prompted the conversion of the relay circuit which at that time could not be applied as originally intended, to telephone use.

Most people think of "priorities" as something which originated with the present war in Europe. Actually, Hydro had established a system of priorities on telephone calls on its own wires years ago. As traffic over the lines became increasingly heavy with the masses of data which had to be transmitted to various points each day, operating men experienced difficulty in getting through messages neces-



sary for the smooth and efficient operation of the system. It, therefore, became necessary to clear the lines of all other conversations when operational messages were being sent, and to keep the lines clear until the emergency had passed.

With the onslaught of adverse weather, a quick means of communication with other parts of the system is necessary if an uninterrupted flow of power is to be assured. When King Winter attacks with sleet, the lighter telephone conductors are generally the first to be affected and the system is further burdened with communication difficulties.

Since under stress of weather, power lines generally remain in service after telephone facilities have been disrupted, Hydro is progressively utilizing power lines for voice communication and power control facilities.

While the ancient gods "jarred" their contemporaries or mere mortals into action with a few thunderbolts, Hydro engineers have evolved a much more gentle manner of harnessing electric power to carry their messages across the countryside. To this end they have called into use almost 1,400 miles of 110,000-volt and 220,000-volt transmission lines to carry the human voice as well as relay and control impulses to various parts of the system.

"How do you keep these high voltages from shocking the telephone user?" inquired Hydro News.

"Easily," smiled the engineer, "we put your voice on the high tension wires as easily as your baby throws you kisses as you leave for work in the morning."

Voice impulses are transformed into electrical impulses by the telephone. These impulses are in turn fed into a

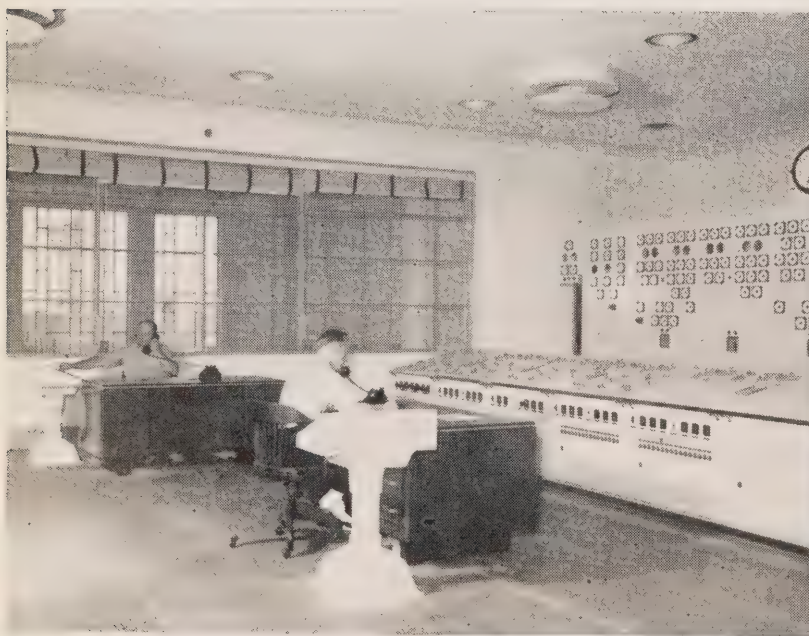
low frequency transmitter which transforms them into radio or carrier waves which are superimposed, on the high tension lines by means of an aerial wire erected parallel to the power conductors, or by direct coupling to the power conductors through condensers.

## Radio-Equipped Trucks

Several of the line patrol trucks are equipped with radio receivers tuned to the frequency of the carrier channel. So long as they are within several hundred feet of the power line over which the carrier circuit is operated, they may be contacted by the master control station and given instructions in cases of emergency. While they cannot talk back to the master station they can, on reaching a Hydro open wire telephone circuit, contact the control station by means of a telephone test set which all patrolmen carry.

Wherever possible telephone circuits are erected in close proximity to the power lines. While this gives rise to some difficulty in eliminating power line noises induced in the telephone circuit, it has definite advantages in saving time in reporting trouble.

A repair crew were testing insulators on a line which was three miles in the bush from the nearest highway. On arriving at the spot where they were to commence work, they cut in on the telephone line, which, at that point, paralleled the power line, and established communication with the control station. The power line was taken out of service and the work of testing and changing insulators was commenced. Meanwhile, information on weather conditions at the other end of the power line



HERE IS Hydro's most modern control room located at the new Burlington transformer station. The operator using the telephone, Roland Gibbon, is not staring, but is actually looking at the indications on the board shown on the right of the picture of the control room. The operator at the far desk is W. H. Hoskins.

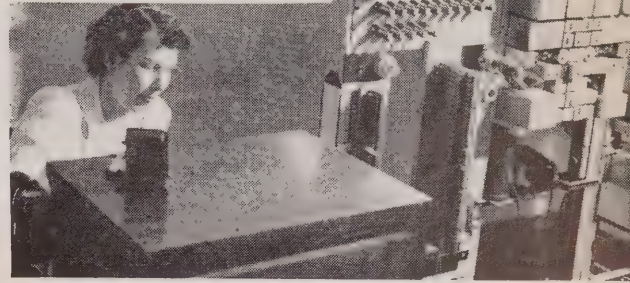




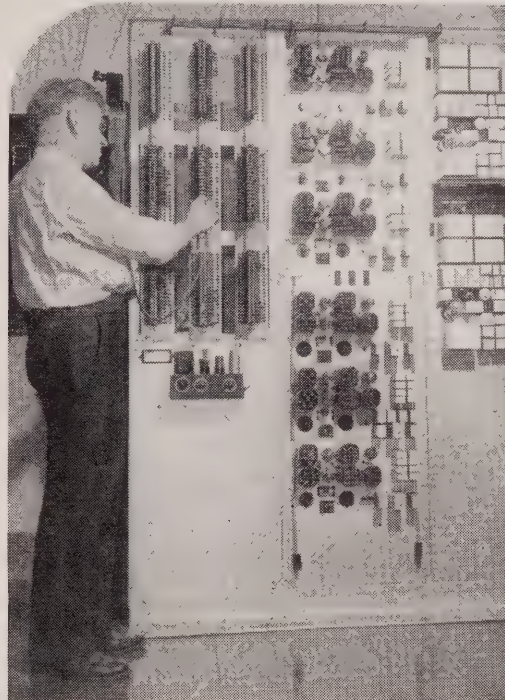


LOAD SUPERVISORS, George Brown and Roy White, were hard at work when the photographer dropped in. Between them can be seen the cordless key type telephone switchboard.

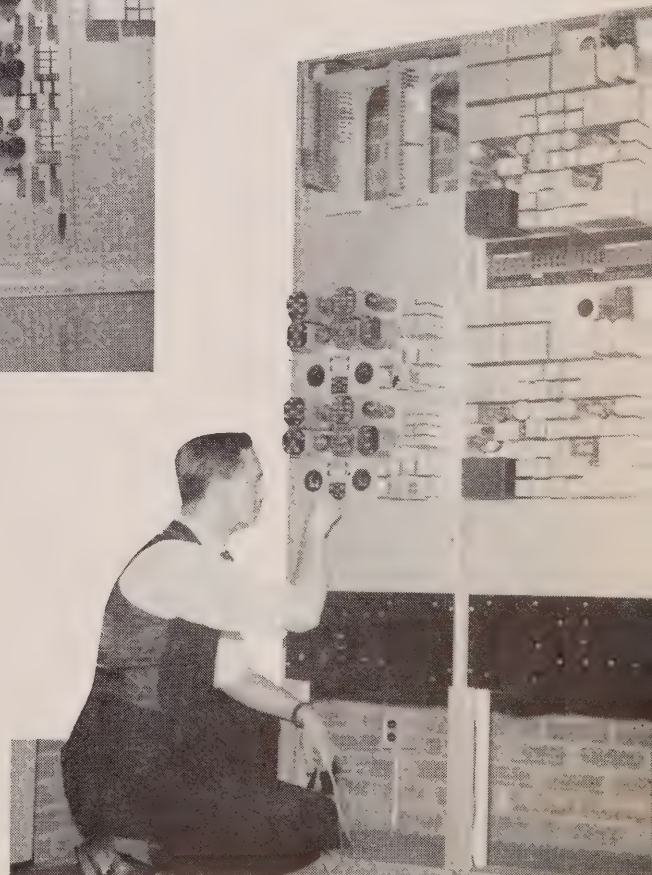
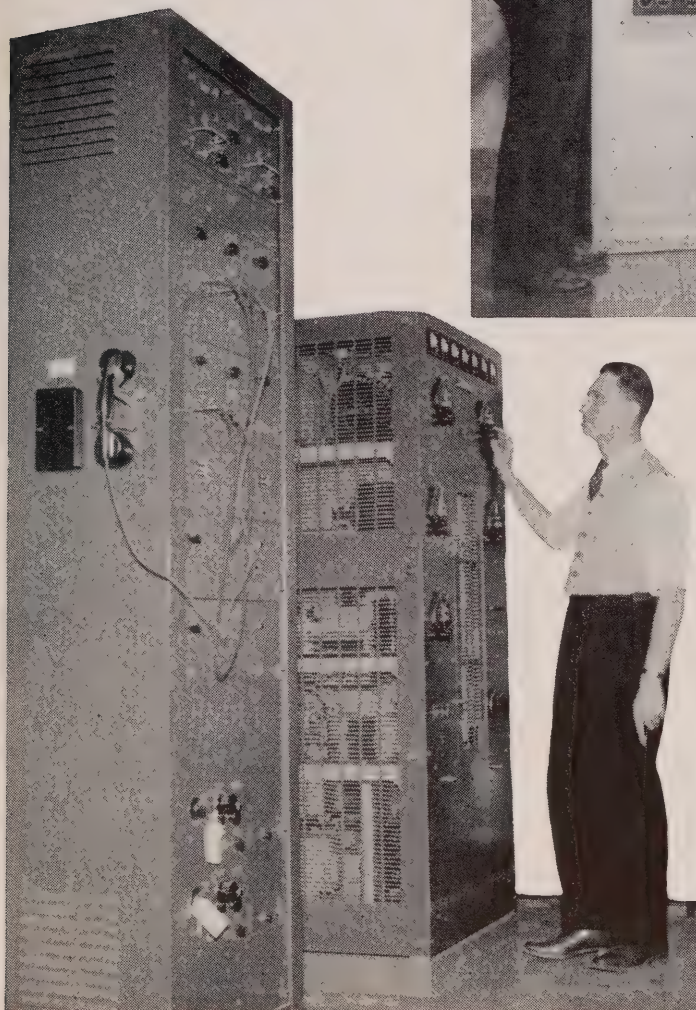
THE YOUNG lady, Mrs. Isobel M. Allison, is the operator at Belleville. On her left may be seen some of the communications equipment.



BELOW ARE the 220-kv Beauharnois-Chats Falls-Leaside power line carrier transmitter cabinets at Leaside T.S.



THE OPERATOR at Wiltshire transformer station, James Fitzsimmons, tests telephone circuits while telephone repeater and carrier equipment may be seen on the right of the picture.



TELEPHONE CARRIER and repeater equipment are checked over by a Hydro telephone technician, W. Evan-Jones, at the Leaside telephone terminal house.



made it imperative that this line be placed back into service as a precaution against service interruption. When this information reached the supervising operator at the control station, he contacted the repair crew, by means of the temporarily established private telephone connection, and within a half hour the line was back into service.

Had there been no telephone communication closer than the highway it would have been necessary to have had a man there who could be contacted by the supervising operator at the control station. Upon receiving information that the high tension line had to be placed in service without delay, this man would then have had to walk through the bush and inform the gang foreman of the message from the control station. The foreman would then have had to remove his grounding equipment, clear his crew from the line and walk out to the highway to get in contact with the supervising operator at the control station, to advise him that the repair crew were clear and the line fit for service. The minimum time which this would require is about three hours. The close proximity of the telephone circuit to the power line enabled this all to be done within the space of a few minutes instead of a few hours.

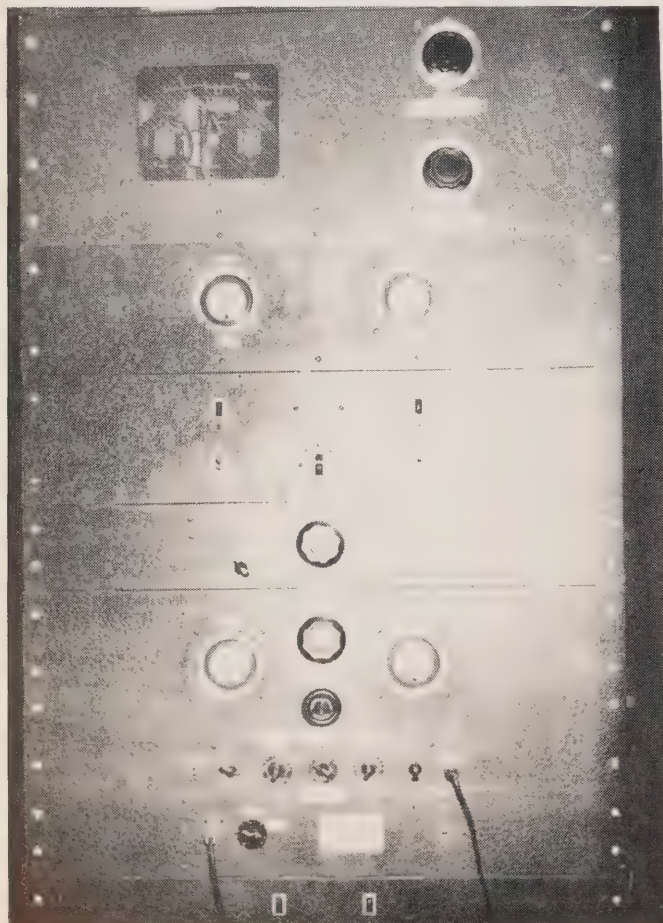
The Hydro telephone line between Coppercliff and

Abitibi Canyon, with the co-operation of the Hydro staff, was the means of saving the lives of two balloonists who were blown off their course and landed in the wild bush country in this vicinity. Pilot Ward T. Van Orman and his aide Frank Trotter, taking part in the James Gordon Bennett International Balloon races at Chicago, after being forced down near this power line, cut down a pole on the telephone circuit and were rescued by the patrolman who was sent out to find the fault in the telephone line. Both men were sick but through the co-operation of the Hydro staff were safely brought out to civilization.

### Ten Radio Stations

As Hydro expanded into the far Northland where telephone line installations became increasingly difficult and the volume of traffic possibly would not justify the expense incurred in erecting telephone lines, the Commission resorted to the use of radio. Ten radio stations are maintained by the Commission linking various outposts with head office.

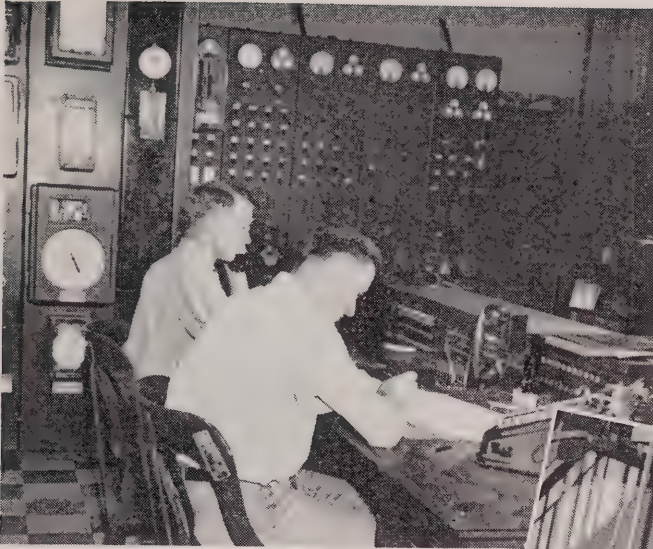
Two of these stations link Barrett Chute and Bark Lake dam, the latter a distance of 65 miles upstream from the generating station. Each day at certain pre-arranged



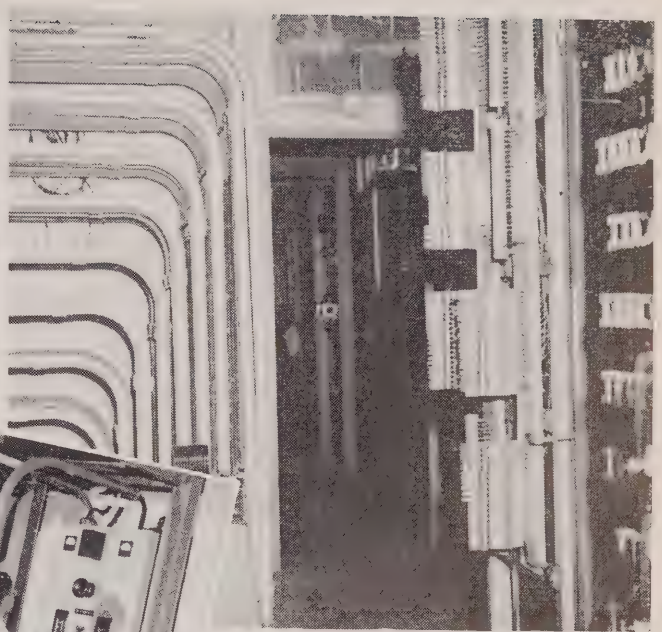
THE RADIO operator at Hydro's Toronto radio station is seen contacting a distant point. Before him is the receiving equipment, while on the left is the radio transmitter.



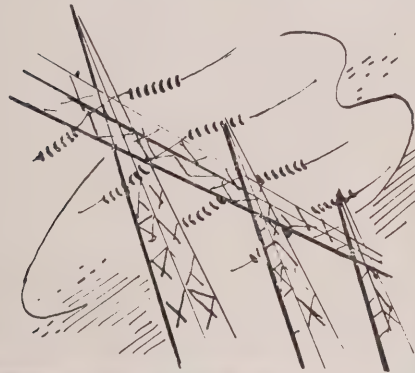




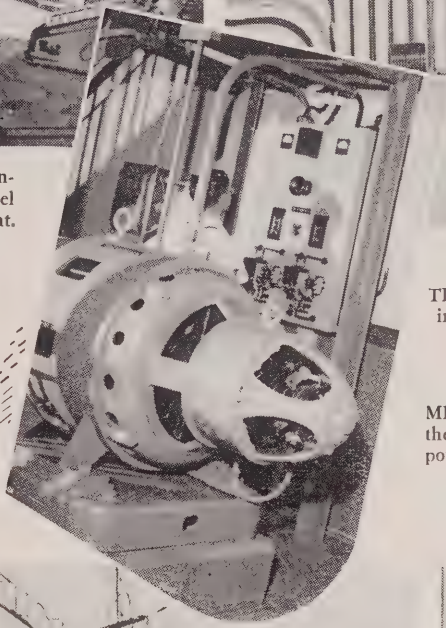
THIS IS a view of the Chats Falls telephone control desk. Just behind the operators, Eric Pogel and Archie Badham, is telemetering equipment.



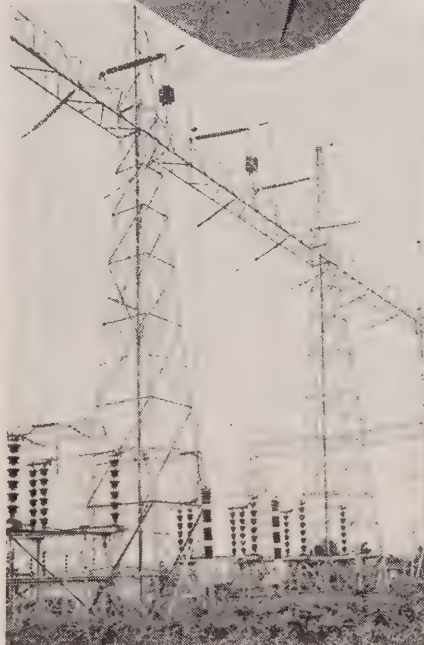
THIS IS the telephone terminal rack equipment installed in the Chats Falls generating station.



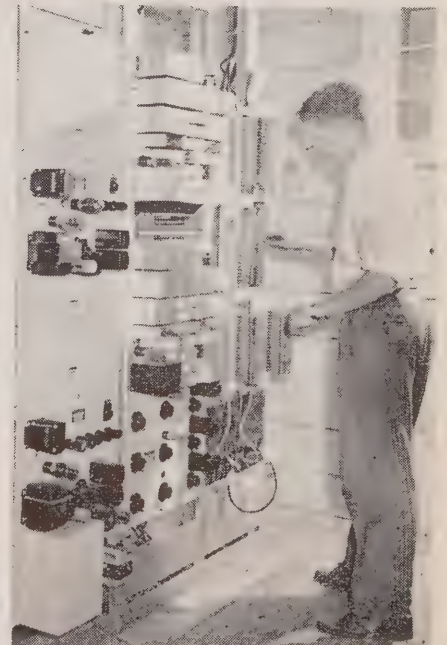
METER INDICATIONS on the control board of the Chats Falls 220-kv carrier motor generator power equipment are checked by an operator.



AN OPERATOR at Chats Falls looks over the 220-kv Beauharnois-Chats Falls-Leaside power line carrier equipment.



THE TWO black ball-like objects just below the power line are the coupling condensers and wave trap equipment.



A TELEPHONE maintenance man replaces carbon-block arresters in the telephone terminal equipment.



times communication is established for the purpose of transmitting the necessary operating information.

At specified intervals each day the radio station in Toronto is in touch with other outlying points so that information vital to the efficient operation of the system may be obtained.

There are, throughout Ontario, several generating stations which are remotely controlled from master stations several miles away. These stations are connected with the control station by multiple pair, lead sheath, telephone control cables, which transmit the electrical impulses controlling the operation of relays and switches at the distant station. Control gates are opened, generators set in motion and automatically synchronized to the line. These cables also provide for the remote indication of gate opening, kilowatt

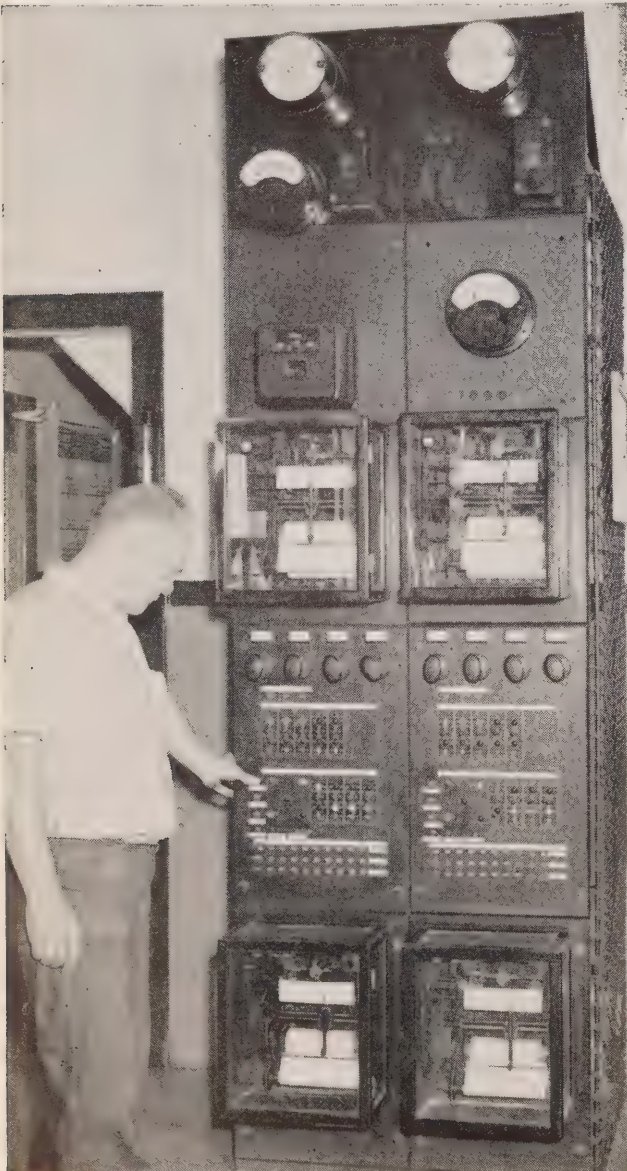
output, reactive-kilovolt-amperes, water level and relay indications in the event of trouble.

Over a total communication circuit mileage of almost 13,000 miles great masses of detailed information on water levels, loads, power factors, voltages, and power demands, flow hourly into load supervisors' offices, which are strategically located throughout the various systems. From this information a load supervisor is able to plan ahead for the demands which may be made on the system under his control.

Hydro's radio communication in the bush country has on more than one occasion been used for the saving of life and for the calling of medical aid to people suddenly stricken with illness in the bush. Such an occasion occurred during the construction of the Ogoki diversion. An Indian boy suffering from pneumonia was dying for lack of medical aid. A radio call for the "white doctor" brought a Hydro staff physician to the boy's assistance by airplane.

While the Hydro communication system is a modern one, and fulfills its purpose of voice transmission over the system, it is still necessary to employ Indian runners for transporting mail in the far north, particularly during the spring break-up. One of these runners was under contract during the construction of the Ogoki diversion. He made two trips a month between Ferland and Waboose Rapids carrying mail a distance of forty miles through the bush.

Hand in hand with the growth of Hydro has grown this modern system of communication with almost 3,000 miles of carrier facilities and nearly 10,000 miles of physical telephone circuits co-ordinating the activities of this great publicly owned enterprise.



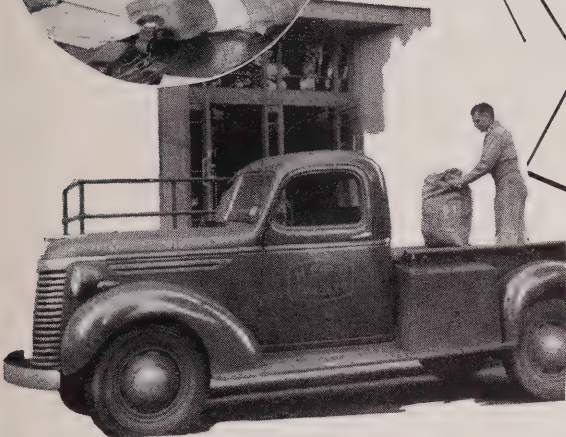
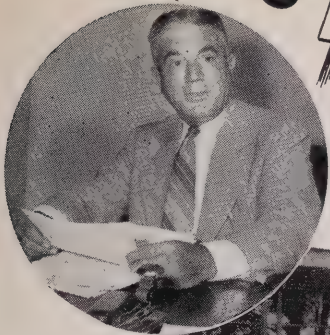
THE OPERATOR, Harry Tinney, has just pressed the button which will put the generator, at a station several miles distant, into operation and is watching the meter indications to see that everything is in order.



W. R. GEDDES, the operator at Barrett Chute generating station, is contacting by radio the dam keeper at Bark Lake, situated 65 miles upstream.



# It's in the Bag!



C. G. McEVOY, head of the mailing and records department (above) who sees that there are no "hold-ups" in the day's mail.

ARRIVAL OF the mail truck (below) at the H.E.P.C. administration building shortly after 7.30 a.m. is shown here. Edward Burnett is seen unloading.



CARRYING THE early morning mail requires a strong back.

**M**OVING like clockwork and with the clock, the staff of the H.E.P.C. mailing and records department handle something like 2,600 pieces of incoming and outgoing mail daily, and about 100 tons over the period of a year.

Hydro News recently spent an interesting day in this department which, by the way, starts work shortly after 7.30 a.m., and goes through in high gear until the last bag is thrown on the truck at approximately 4.50 in the afternoon.

Briefly, the routine is this: bags of mail are picked up at the main postal station by the Hydro truck at 7.30 a.m. and rushed to the H.E.P.C. administration building, where the contents of the bags are dumped on tables and divided into three groups, according to the size of the envelope—8's, 10's and the large brown envelopes. Then they are sorted into personal, executive and departmental mail; letters to be opened by the automatic cutting machine; and other incoming mail such as cheques and general correspondence that are opened by hand.

The sorting is checked, and the letters are ready to be opened by the cutting machine. After the mail is stamped, to record date and time of arrival, and the department to which it is going, it is handed to C. G. McEvoy, head of this section, who marks the letters for reference to the respective department heads.

The letters are now stamped with a number, and a record is kept of every incoming letter. The subject, name and location of the company are noted, and, eventually, the file number is also recorded.

The mail is next placed on the distribution table, where it is sorted into departmental pigeonholes, and then the mail carriers distribute it to the various departments.

It is estimated that approximately 1,000 pieces of mail are received during an average day. This does not include newspapers. Outgoing mail averages about 1,600 pieces a day.

There are two other incoming post office deliveries during a day; one at 11 a.m. and the other at 3 o'clock, but the early morning batch is invariably the heaviest.

Deliveries to the various departments are made every hour on the hour, and collections are made on the half hours.

Now for the outgoing routine. When collections are brought down, the mail is placed on the sorting table and the distribution clerks segregate the inter-departmental from the outgoing. If envelopes have not previously been typed, this is done and the mail is ready for weighing, stamping and sealing.

Two machines of different sizes are used for stamping and sealing the mail. One is used for letters requiring postage of from one to ten cents, and the other for material requiring postage up to \$9.99.

In order to facilitate operations at the postal terminal, metered pieces are tied in bundles, and the city mail is put in a separate bag. All the bags are eventually piled on the truck and rushed to the post office. The truck driver is accompanied by a special messenger who carries all registered mail.

In this, as in other departments of the Commission, wartime conditions have made it necessary for girls to take over many of the duties which were formerly carried out by young men who are now in the armed forces. And the smock-clad corps of mail girls is doing a fine job, playing their full part in the daily operations of Hydro in Ontario.

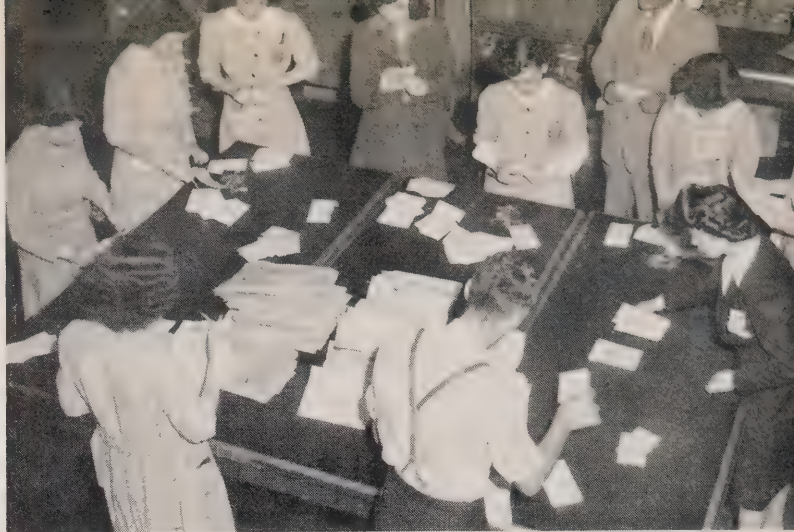




DUMPING THE incoming mail on the table prior to sorting is the first task of the day for George Shierlaw, assistant to C. G. McEvoy.



VIOLA BRETT separates the mail into three piles, according to size of envelope.



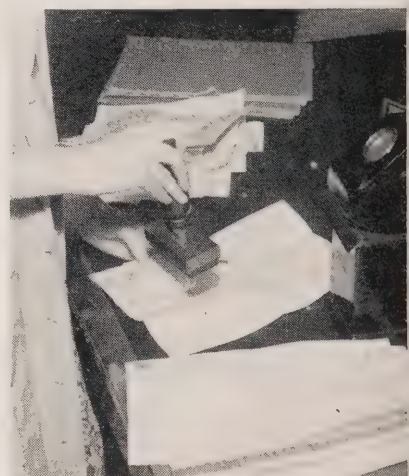
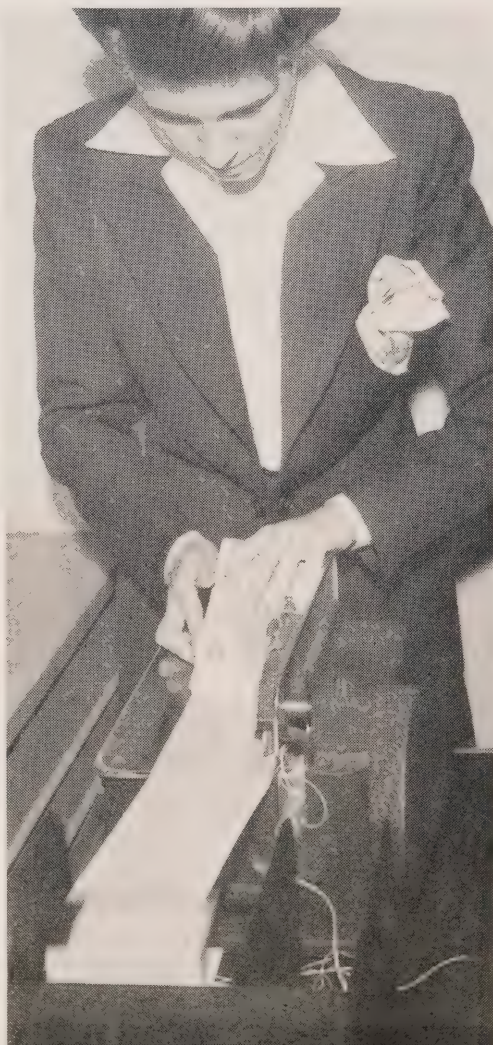
SORTING, OPENING and checking the first incoming mail is recorded in this picture. Cheques and other attachments are clipped to the envelopes and stamped with the date and time received.

## IT'S IN THE BAG

PUTTING THE envelopes through the automatic cutting machine, which operates at a rate of 125 envelopes a minute is the interesting operation shown here. Note the thread-like shavings.

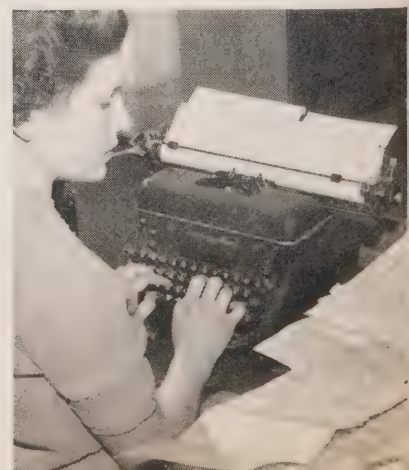


TIME STAMPING of departmental envelopes, which are not opened by the mailing department, is shown here. Doris Storrer, who is an English war guest and who expects to return to her homeland in the near future, is the operator.



THIS ILLUSTRATION shows the departmental stamp being placed on the incoming letters which indicates, when ticked off, to which department they belong.

ENTERING UP the cheques (below) so that all chance of loss is eliminated is an important task in the daily routine. Olive Guy is the recorder.







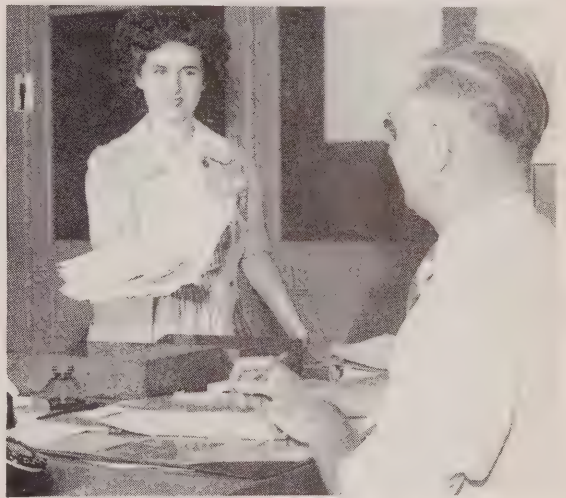
**SORTING THE** incoming mail into the departmental pigeonholes is the job being done by Eleanor MacDonald and William Dawson.



**MAIL CARRIERS** remove material from departmental pigeonholes before proceeding with the distribution.



**MAIL CARRIERS** start out on one of their daily deliveries. Reading from left to right: Kathleen Cassidy, Barbara Smith, Shirley Montgomery, Norma Stevenson and Genevieve Kelly.



**FIRST STOP** for this particular mail carrier heralds a busy morning for G. F. Aram of the purchasing department.



**A GENERAL** view of the mailing and records department is shown here. Included in this group are: Mrs. Agnes Sweet, Enid Hopley and Mrs. M. Sampson.

**HERE ARE** a few of 948 filing drawers (right) in the mailing and records department. A copy of every outgoing Commission letter is filed. Current letters are kept in this section, and older material is sent to the vaults.



**DOROTHY HONEYWELL**, shown here, was caught in the act of finding "homes" in the various filing cabinets for these folders.







LAST PICK-UP for the day of outgoing mail from the operating department, which has its own delivery girls and one main collection depot, is shown here.



AFTER THE last collection has been made, around 4 o'clock, the d'stribution clerks segregate the inter-departmental from the outgoing mail.



OUTGOING MAIL is run through the postage meter machine, which automatically seals envelopes and imprints the postage. This device operates at the rate of 120 envelopes a minute.

COPIES OF Hydro News are counted, packaged and weighed for postage. Mrs. "Betty" Price was busily engaged in counting when the photographer got this shot.



LUCILLE PARFIT places outgoing mail for rural superintendents into pigeonholes where it remains until the end of the day. Under this system, each superintendent receives one large envelope which contains all material for the day.

TOSSING THE outgoing mail into the bags (below). Metered letters are put into separate containers, and this facilitates the work at the post office and thus ensures speedier delivery.

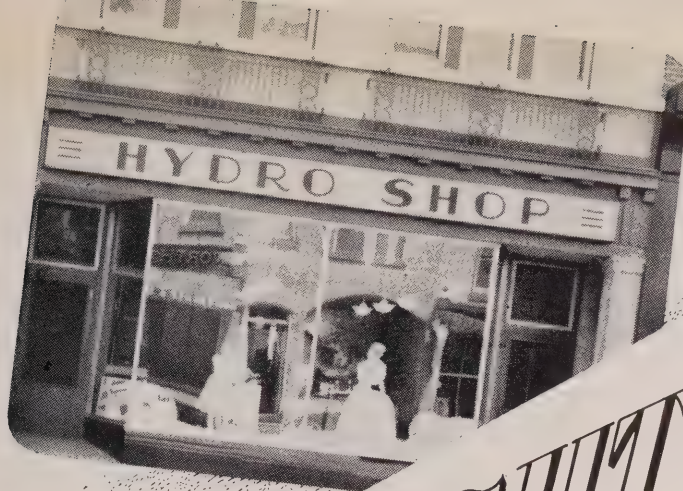


WEIGHING AND putting meter postage on "heavy" outgoing mail are the operation shown here. Alice Blackburn is reading the scales.

FINIS IS written to a long busy day when the last bag is put on the truck. The young lady accompanying the driver takes all registered mail to the postal terminal.

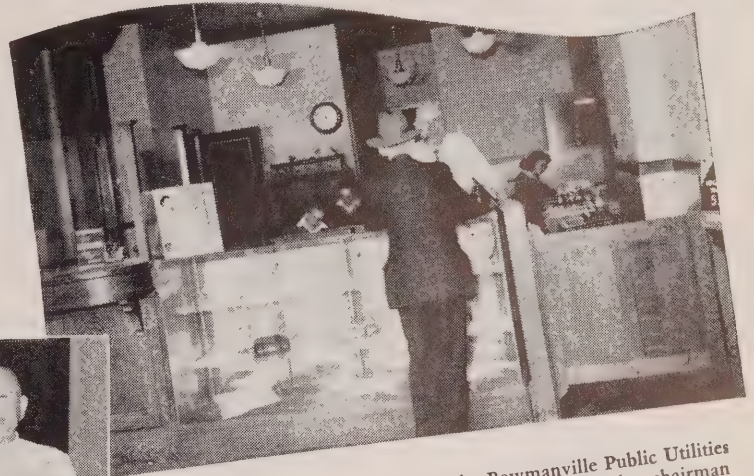




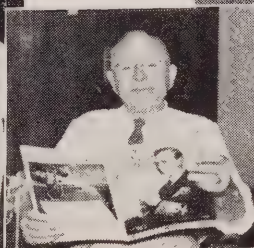


# BOWMANVILLE

## SPOTLIGHT on



THE OFFICE and salesroom of the Bowmanville Public Utilities is pictured above, while on the left is W. Ross Strike, chairman of the commission, and the office staff. Inset is general manager, George E. Chase.



**W**OMENFOLK in Bowmanville are backing up their fighting men. They're beating out a victory tune on the anvils of the foundry, and keeping the wheels of the factories whirling at high speed, working for the day when the boys come home again.

This fact was observed by Hydro News, on a recent visit to Bowmanville, where tours of inspection were made through the Goodyear factory, in which the largest conveyor belts made are fabricated, and the Bowmanville foundry, where gray iron and malleable castings are being made for war purposes. Pictorial impressions of the trip accompany this article.

Incorporated in 1857, the town was named after Charles Bowman, a native of Scotland, who came to Canada in 1824 and carried on an extensive private banking business. Residents are, for the most part, descendants of pioneer stock of the English counties of Devonshire and Cornwall.

Situated in the midst of a thriving agricultural district, the town has always had an industrial assessment backlog. In the early days, the Upper Canada Furniture

Company and the Dominion Organ and Piano Company were thriving industries and, for the past 25 years, the rubber industry, R. M. Hollingshead Company Limited, Bowmanville Foundry Company, Bowmanville Glove and Mitt Company, and the Cream of Barley plant have kept the artisans of the district employed.

In the nearby village of Enniskillen the McLaughlin Carriage Works was established and today, headed by Col. R. S. McLaughlin, it is known as General Motors of Canada Limited of Oshawa.

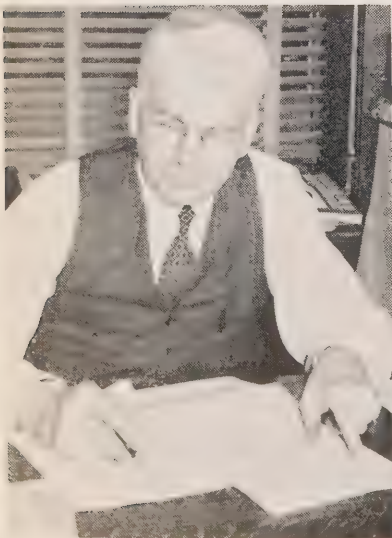
Bowmanville is served by a weekly paper, "The Canadian Statesman," which has been recording the activities of the community for the past 83 years and, for the past 60 years it has been edited by a member of the James family. The present editor, George W. James, known among his friends in town, as "the old gray mayor," lays some claim to the success of Durham County boys on behalf of his paper. He points out that Dr. Herbert A. Bruce, formerly Lieutenant-Governor of Ontario, R. S.

(Continued on page 23)



## SPOTLIGHT ON BOWMANVILLE

THIS IS the McLaughlin Carriage Works at Enniskillen which was later moved to Oshawa and became known as General Motors of Canada Limited. Inset is Col. R. S. McLaughlin, who is now head of General Motors.

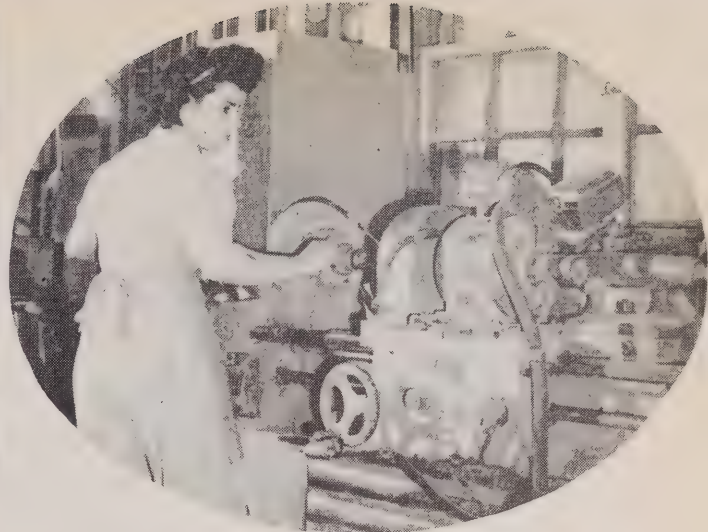
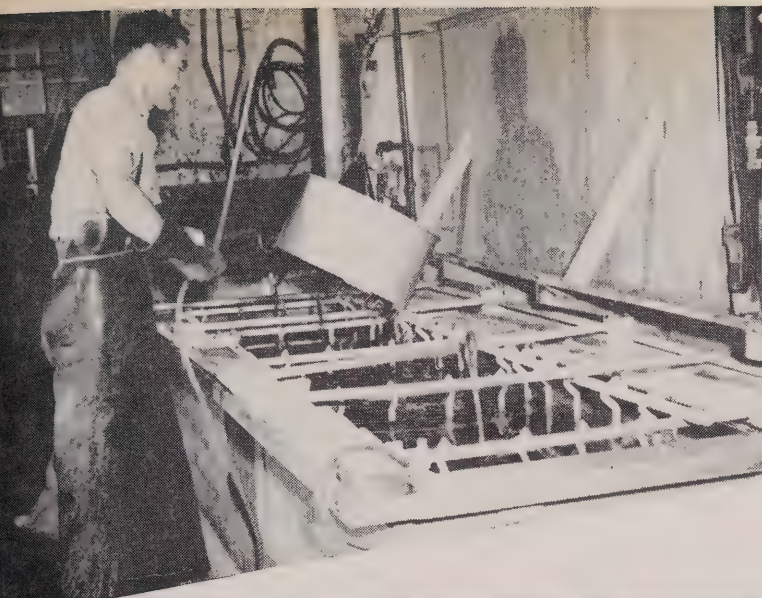


RIGHT IS the "Statesman" office on the main street at Bowmanville.

ON THE left is George W. James, editor of The Canadian Statesman.





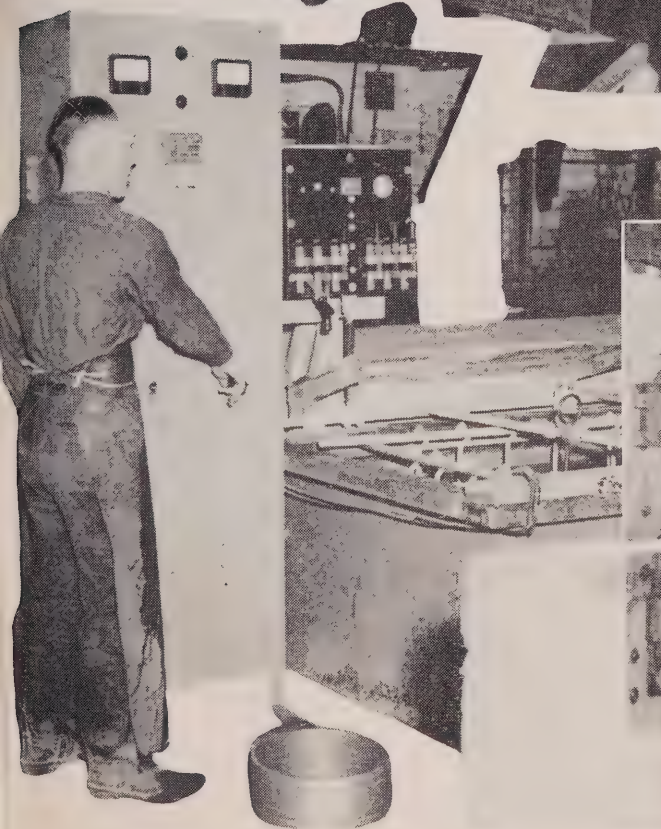


THIS YOUNG lady is trimming wringer rolls.

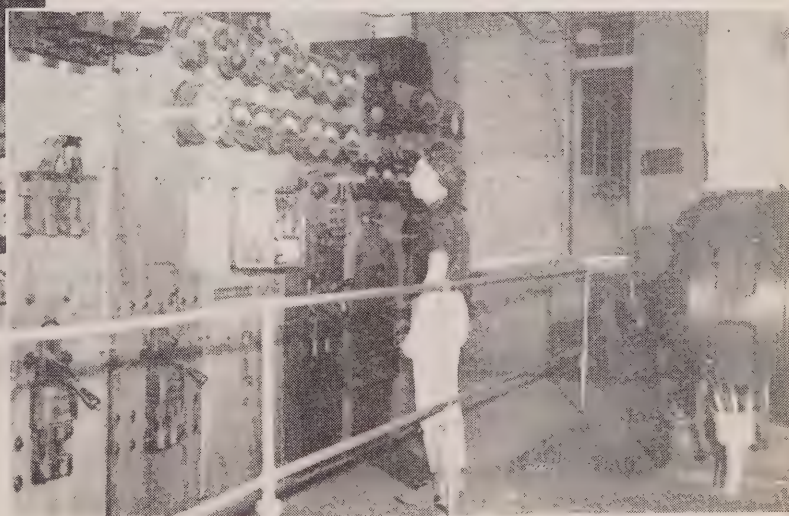
BOGEY WHEELS for tanks, (above) are being lifted from the electrolytic brass plating bath.



THE TIRES on the bogey wheels (left) have been cured and the workmen are removing them from the moulds.



A WORKMAN adjusts the control on the equipment which regulates the flow of electricity through the plating tanks.

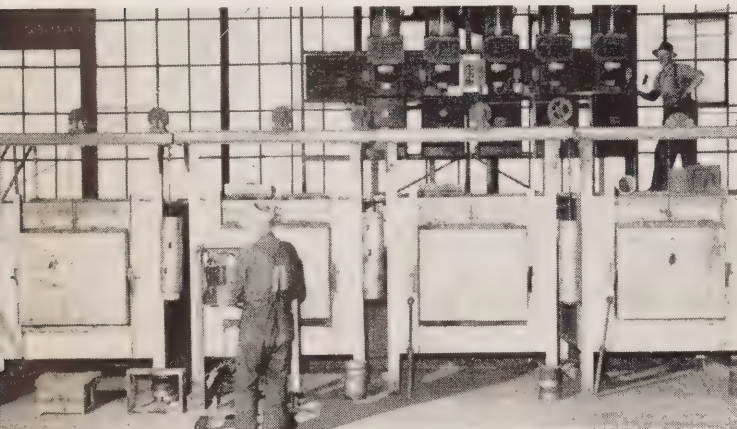


THIS IS THE control panel in the powerhouse at the Goodyear Rubber Company plant. An employee is checking the meters on the panel.

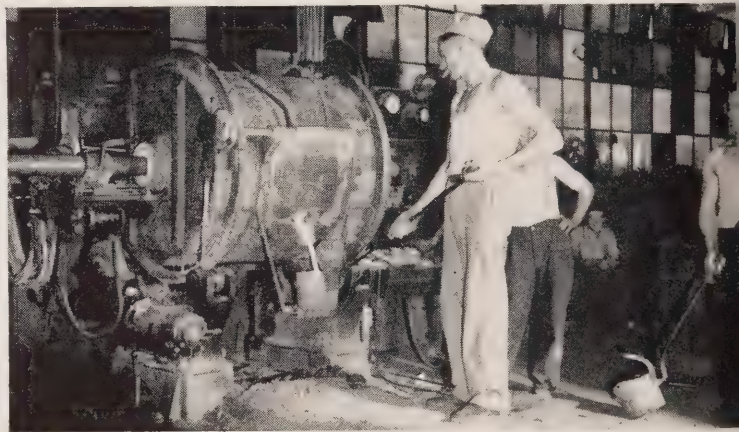




THIS IS The Bowmanville Foundry of-  
fice staff



ANNEALING OVENS in the Foundry temper the castings. Electric control equipment is seen above them.

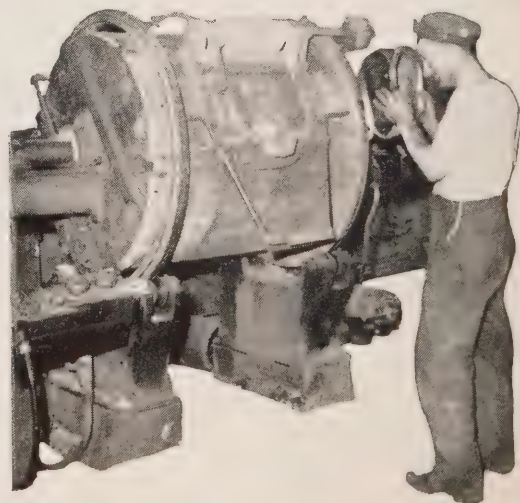


FOUNDRYMEN FILL their ladles and carry them to the waiting moulds.



THE MOLTEN steel is poured into the mould.

A FOUNDRYMAN checks the heat of the melt.





# CSA SERVICE NOW EMBRACES MATERIALS AND PROCESSES

**Scope of Activities Goes Beyond Engineering Field,  
Under Amended Letters of Patent**

**U**NDER amended letters of patent, the Canadian Engineering Standards Association becomes the Canadian Standards Association, to extend the scope of its service beyond the field of engineering to embrace the standardization of materials and processes of all kinds.

In making this announcement, W. R. McCaffrey, the secretary, stated: "The CSA is entering an unlimited field of activity because it is evident that the need for standardization will become more apparent as Canadian industry gradually returns to peace-time production."

Since its inception in 1919, Mr. McCaffrey revealed, the association has published approximately 180 standard specifications and codes within the engineering field, and 20 more are about to be published. The publications represent essential features of specifications for production and purchasing use; safety codes that provide measures to counteract fire and accident hazards; approval specifications for electrical equipment; procedures for testing various types of equipment and engineering materials.

## **Endorsed By Government**

Many of these standards and specifications have the necessary legislative backing, and they form the basis of provincial inspection throughout Canada. The CSA is affiliated with the National Research Council, and, while fully autonomous, has the endorsement of the Federal Government. The association works in close co-operation with departments of the Federal and provincial governments.

Until now, the association has not accepted the responsibility for formulating standards for projects other than engineering, because it felt limited under terms of the letters patent of incorporation. Now, with amended letters patent involving the deletion of the term "engineering," the CSA has authority to extend its activities to an unlimited field, as well as increase its work within the scope of engineering.

## **Acts As Clearing House**

Briefly, the aims of the CSA are: to originate and furnish Canadian standards of any nature; to avoid duplication of work; to act as a clearing house for information on standardization; to further the movement as a means of advancing national economy; to promote a knowledge

and use of approved Canadian standards in this and other countries and to serve as an authoritative Canadian channel in international co-operation.

The association, Mr. McCaffrey said, will register its name and trade marks and will control their use.

Similar organizations throughout the Commonwealth, like the British Standards Institution, have been reorganized into their present form because of the obvious advantages in the establishment of standards on the basis of international, as well as national acceptance, particularly during the war and in the immediate postwar period. Canada now realizes that it must have a national standardizing body in order to keep abreast of international development.

The Hydro-Electric Power Commission of Ontario, which has wide representation on CSA committees, was literally in "on the ground floor." Vitaly interested in the question of standards and specifications in Ontario, the Commission, before the inception of the CESA in 1919, had established Rules and Regulations Governing Electrical Installations and Equipment, and was charged with the responsibility of enforcing these regulations in the Province.

## **Hydro Aids Growth**

With the birth of the Canadian Engineering Standards Association, Hydro, with its background and experience in this work, was in a position to contribute very materially to the growth of this organization to its present status and importance.

Today, the Commission is still responsible for the enforcement of the Hydro Rules and Regulations, and through its representation on committees of the CSA renders valuable assistance in the preparation of the Canadian Electrical Code, as issued by the CSA, in addition to the preparation of CSA standards.

It is interesting to note that the Canadian Electrical Code comprises four specific classifications as follows:

- Part I Essential Requirements and Minimum Standards Governing Electrical Installations for Buildings, Structures and Premises;
- Part II Essential Requirements and Minimum Standards Covering Electrical Equipment;
- Part III Outside Wiring, Inductive Co-ordination, Definitions and Principles;
- Part IV Control of Radio Interference.





### MANAGER AT BOWMANVILLE

General manager of the Bowmanville Public Utilities Commission is **GEORGE E. CHASE**, who was born and educated in Brighton, Ontario.

As a youth he was interested in baseball, lacrosse, cricket and football. Now he does a little hunting and fishing and whenever he can find time he plays a few rounds of the Royal and Ancient Game. Mr. Chase has been manager of the utilities since 1916, and also has a large rural district under his watchful eye.

### MEET MAYOR MORRIS

Although a comparatively newcomer to the Bowmanville Public Utilities Commission, Mayor **CHARLES GORDON "TED" MORRIS** has had considerable experience in municipal affairs, having been a member of council from 1934 to 1939; a member of county council and deputy reeve from 1940 to 1942; and reeve in 1943. In 1942 he was acting mayor for six months, and in 1944 was elected mayor.



Born in Bowmanville in 1902, Mr. Morris received his primary and secondary education there, following which he attended the University of Toronto. Later he graduated with honours from the Ontario School of Embalming.

While at school he took an active interest in soccer, boxing, track and water polo. Now his hobbies are hunting, books and music.

Mr. Morris' forebears have been identified with the Bowmanville district for many years, his grandfather having been one of the early settlers.

### FINE RECORD OF SERVICE

**MILTON J. ELLIOTT**, has served the Bowmanville Public Utilities Commission for the past six years. Prior to that time he had served the community as councillor, deputy reeve, reeve and warden of the counties of Northumberland and Durham, and as mayor of the town for three years.

Born and educated in the municipality, he took a keen interest in baseball and hockey, now his hobbies are show horses, farming and fruit growing.

Mr. Elliott is of pioneer stock. His grandfather was the first settler north of the sixth concession of Clarke Township in the County of Durham.



### O.M.E.A. CHANGE PLANS

Stratford replaces Guelph as the meeting place for District No. 6, O.M.E.A., on September 27.

Morning sessions will open at 10 a.m. at the Stratford city hall.

### KILLED IN ACTION

Capt. **GEORGE C. REYNOLDS**, formerly an inspector with the H.E.P.C. electrical engineering department (transmission section) and **ANDREW McLAUGHLIN**, previously employed in the Connaught rural power district, have been reported killed in action.

**THOMAS AUBREY ROGERS, R.C.A.F.**, a former employee of the H.E.P.C. operating department, has been officially reported missing.

### REPORTED MISSING

**F.O. MERVYN L. G. LOVERING, R.C.A.F.**, who was formerly a lineman with the H.E.P.C. construction department, is reported missing on his seventeenth operational flight. F.O. Lovering was with the Commission for three years, having enlisted in December, 1941.

### BLUE GEESE

**M**ANY flocks of blue geese, numbering from 40 to 150 birds in each flock, were observed passing Rat Rapids, flying northeast by east, according to a report from Clarence Watson, formerly superintendent of the H.E.P.C. plant at Rat Rapids.

For about a week, two to four flocks were noted during the day and at night, coming in from the southwest by west, flying across the country but not following the course of the Albany river as might have been expected.

In May, 1942, it is reported, that Mr. Watson observed large flocks going eastward north of Rat Rapids and he concluded that their route across that area was a rather narrow one. There is no information available on their movements at Rat Rapids in the Fall.



# Here It Is !

"J T" in the title of this little story stands for the lamp which the young lady—"Betty" Taylor of the Commission staff—was admiring when a photographer appeared on the scene.

It was supposedly a good lamp. It couldn't have been anything else for it was in St. Andrew's Presbyterian Church at Thamesford for nearly 30 years.

"And," chuckled the office wit," the congregation saw the light for the name is now Thamesford United Church!"

However, after lighting the way under this new ecclesiastical aegis for a few years, the lamp showed evidence of waning strength. At this point, G. M. Hamilton, secretary-treasurer of the Thamesford Hydro-Electric System, came into the picture. He ministered to the lamp, and after reviving it, gave it a home in his basement.

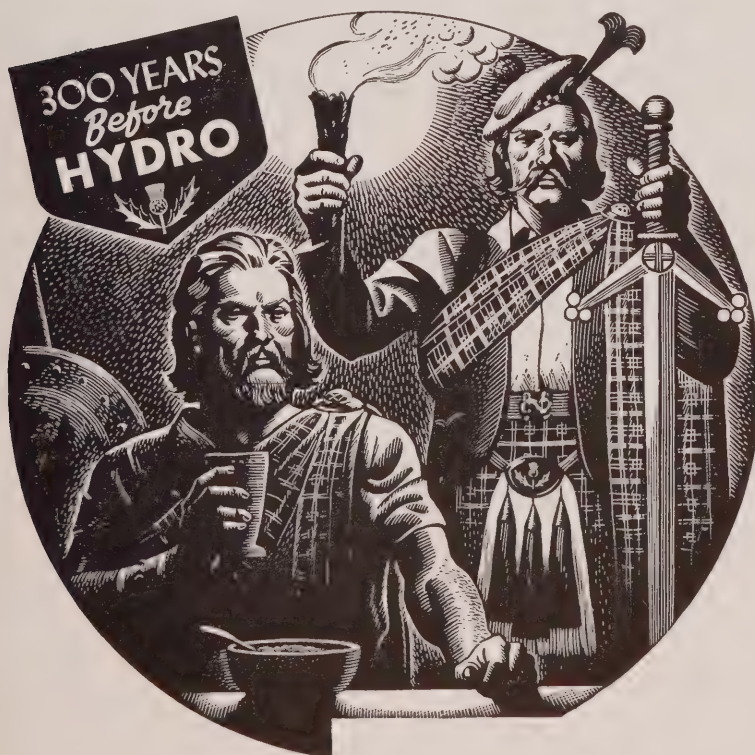
Then comes the gripping climax. When Don Martin of the Commission staff was in Thamesford recently, Mr. Hamilton broke the news that this faithful servant would never again lighten the way. After only a few weeks in Mr. Hamilton's home, the lamp died.

Mr. Martin at once sought the kind of biographical details which would pay a fitting tribute to a lamp which had such a long and brilliant career.



Apparently, it left Europe about 1915 and came to Canada, eventually reaching Thamesford where it met the requirements of the elders of the Thamesford kirk. The lamp, it is reported, was a 60-watt tungsten vacuum-type unit.

The present Valhalla is the sales promotion department of the H.E.P.C. administration building.



**I**N days of old, Scottish clans had their differences of opinion and, on occasion, stalwart, bewhiskered, tartan-kilted gentlemen were known to be quite robust in their efforts to reach decisions on certain contentious points.

From what is known of these days of daring and dashing deeds on the heather-carpeted hills of Auld Scotia, it must have been a "bonnie sicht" to have seen the kilts flying as the laddies went into action.

Of course, there were times when the boys would bury the hatchet and sponsor a social get-together, as it were. On these occasions, as a mark of honour, each guest was attended, not by a torch singer, but by a "torch-man." An artist's impression of one of these gala events is reproduced here.

Ghosts of these Highland lads who had the job of holding the torches are probably having quite a debate as to why no one had thought about the possibilities of Hydro and Hydro long-life lamps. Aye, it must be admitted, wif low-cost power and a' that, they wad hae saved time, effort and quite a bit o' siller.





IT SEEMS but yesterday since we were planning the summer vacation. Now, it's September—a month that usually marks a change-over in the daily routine of the home. In many parts of Ontario, children are now setting out for school instead of the swimming hole.

The last week of school holidays is usually a hectic one for the homemaker in seeing that young Mary and John are outfitted with new clothes or in doing some sewing on suits and garments that "can do" for another year.

Thanks to the electric sewing machine much of this work can be done quickly and with little effort.

This fact brings to mind a few tips we would like to pass along. If, by any chance, you have found that the machine is skipping stitches, the needle is either bent or out of position. Uneven stitches can usually be traced to one of four causes viz: the pressure-foot not resting evenly on the material; the stitch being too short; pulling the cloth or too fine a needle being used with coarse thread.

SEPTEMBER IS also a month which reminds us that it is time to plan for the overseas Christmas parcels. All these parcels have to be in the mail before October 15 if they are to arrive in time. If they are being sent to allied forces in the United Kingdom or Iceland, or to men aboard British and Canadian ships abroad, they should not weigh more than eleven pounds, including packing material. Postage is 12 cents per pound. In the past, many of these parcels have never reached their destinations because the senders have omitted the regimental number or some other important detail in the address. The complete address is necessary and, if the unit is outside Britain, it is important to add the following: "B.E.F., Army Post Office, England."

It is also well to remember that the authorities have the right to confiscate a parcel if the contents are not fully described.

AND WHILE on the subject of parcels, here are a few pointers on the kind of gifts that are really appreciated.

Pictures from home—of mother, wife, baby, the dog—are always welcome. A copy of the Bible was rated by 65 per cent of Naval personnel as a grand gift, and good books and magazines also received an impressive popularity vote.

Windproof cigarette lighters are also welcomed, but remember, lighter fluid or matches must never be sent. You can include flints, pipe cleaners, sewing kits, leather wallets with insignia (not just any wallet), shoe brushes, razor blades, soap, tooth powder, hair tonic, writing pads and envelopes. All these are gifts which will be appreciated. And then, of course, you can include canned goods, especially soups and concentrated foods, canned fish, waxed cheese and packaged crackers.

Of course, a fruit cake really completes the Christmas parcel, provided it is well packed. Remember, cakes, cookies, and chocolates very often become "mashed up" before they reach their destinations.

A HYDRO employee passes along this method of preparing eggs to send to places where there are only powdered eggs: hard-cook eggs in the top of a double boiler and over boiling water for 25 minutes. (Do not pile the eggs 2 deep in the top of double boiler.) Dry the eggs; roll in hot parawax; let cool. Roll a second time in hot parawax; let cool. Wrap in waxed paper.

GRAPES—ONTARIO'S last perishable fruit of the season is ripening, and the time is now ripe to fill spare jars with grapes—with grape juice to be served, hot or cold, as a sauce, to top desserts, as jelly for breakfast, or in gelatine for dinner dishes. This delicious fruit is quite inexpensive, and the period required for cooking or canning is unusually short. Fortunately, too, grapes are easy to "do down."

For years, superintendent H. C. Fort, Simcoe rural power district office, has used the following simple method:

Wash grapes (preferably Concord) and pull from stems. Put 1 cup in a quart sealer. Add 1¼ cups sugar. Fill the sealer to overflowing with boiling water . . . it must be boiling. Seal and store.

Grape juice without sugar: After picking grapes, leave for two or three days to mellow. Pick over and wash. Add ¼ cup water for each cup of fruit. Simmer until tender—DO NOT BOIL. Press through cheesecloth. Clarify by straining again through another cloth. Re-heat juice to simmering point only, stirring constantly. Pour into sterilized bottles. Cap and immerse in hot water bath, kept at simmering point, for 15 minutes.



## SPOTLIGHT ON BOWMANVILLE

(Continued from page 15)

McLaughlin, president of General Motors of Canada Limited, the late W. N. Tilley, K.C., who was one of Canada's outstanding corporation lawyers; J. E. Atkinson, president of The Toronto Daily Star, and Hon. Vincent Massey, Canada's High Commissioner in London, were all born in the area and were brought up on the "Statesman."

Electricity was first supplied to Bowmanville by the Bowmanville Electric Light Company. The plant and equipment of this company was later, possibly around 1907, acquired by the municipality, and for a time operated as a municipal utility. The corporation sold the plant in 1911 to the Seymour Power and Electric Light Company, and this company's interests in Central Ontario were purchased by the Ontario Government in 1916. In 1928 these assets, properties and rights were vested in the H.E.P.C. The Commission operated the municipal system until 1931, when the residents of the town voted, by an overwhelming majority, to purchase their own system and set up a local commission.

At that time the load was approximately 1,500 horsepower, while today this has grown to almost 3,000 horsepower. There are approximately 17 miles of distribution line in the municipality, and 133 miles in the rural area surrounding it. The commission is serving 1,125 domestic, 155 commercial, 26 industrial and 667 rural customers.

Bowmanville operates the rural power district supplying power to the surrounding countryside. This rural district has had a steady, healthy growth from the time when it began serving four customers in 1924. Since then the district has grown until today it is serving nearly 700 customers over 133 miles of rural line.

Electrically driven pumps, which supply part of Bowmanville's domestic water requirements, are fed from the rural system and the town's water supply comes from springs in the hills north of the municipality. Originally, the force of gravity was sufficient to maintain the pressure required for domestic use, and a pumper was able to boost this pressure sufficient for fire fighting purposes. As the town grew it was found necessary to develop springs at lower levels in the hills and instal pumping equipment to force this new supply into the mains.

A noteworthy achievement of the Bowmanville commission is that of clearing off its 20-year debenture debt amounting to \$71,000 within 10 years of its inception. At the same time, rates have been reduced from the equivalent of five cents and two cents to 3.2 cents and one cent, and a sum exceeding \$7,000 has been returned to consumers in the form of rebates. Today the system, valued at \$127,285, with investments of \$50,000, is free of debt.

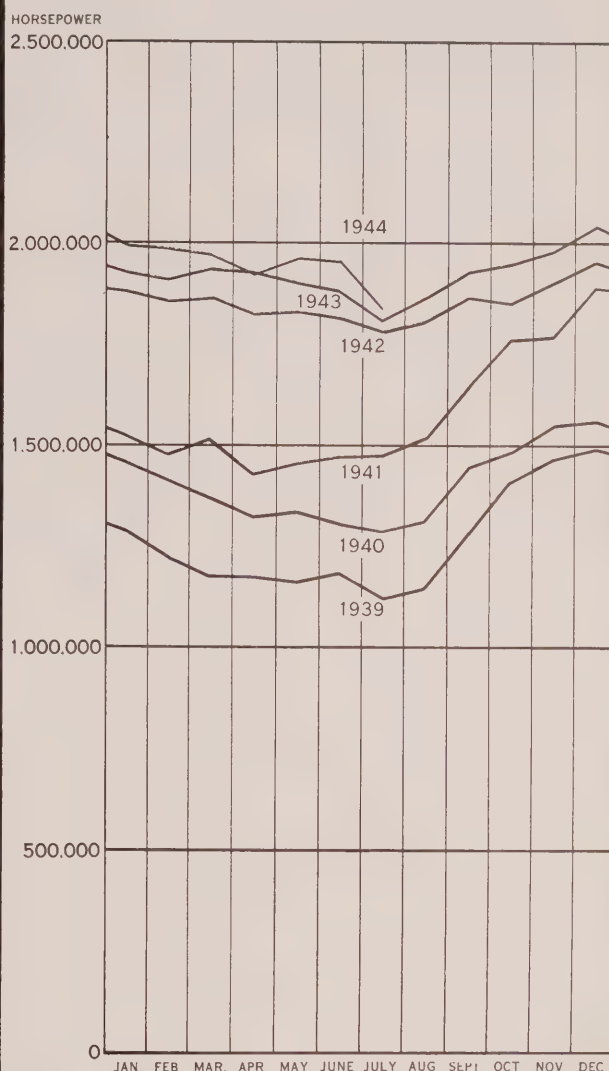
There has been a splendid response on the part of the citizens to the conservation program which has resulted in a saving of approximately 15 per cent for war production.

The commission is now under the able direction of W. Ross Strike, chairman, who was recently appointed to The Hydro-Electric Power Commission of Ontario; M. J. Elliott, and mayor C. G. Morris, commissioners, and George E. Chase, general manager, to whom a great deal of credit is due for the Hydro's progress in Bowmanville.

## SOUTHERN ONTARIO SYSTEM

EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO  
DIVISIONS

## PRIMARY LOAD



## PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	JULY, 1944	JULY, 1943	
SOUTHERN ONTARIO SYSTEM	1,831,426	1,801,676	+ 1.7
THUNDER BAY SYSTEM	99,866	101,307	- 1.4
NORTHERN ONTARIO PROPERTIES	204,991	191,347	+ 7.1
TOTAL	2,136,283	2,094,330	+ 2.0

## PRIMARY AND SECONDARY LOADS

SOUTHERN ONTARIO SYSTEM	1,987,572	1,902,507	+ 4.5
THUNDER BAY SYSTEM	114,745	120,938	- 5.1
NORTHERN ONTARIO PROPERTIES	241,854	230,623	+ 4.9
TOTAL	2,344,171	2,254,068	+ 4.0



# MUNICIPAL LOADS, JUNE, 1944

## SOUTHERN ONTARIO SYSTEM

### NIAGARA DIVISION

(25-Cycle)

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Acton	1,605	1,903	Erieau	144	281	Oil Springs	176	541
Agincourt	213	P.V.	Erie Beach	30	21	Otterville	99	P.V.
Ailsa Craig	144	487	Essex	502	1,886			
Alvinston	91	649	Etobicoke Twp.	7,769	V.A.			
Amherstburg	979	2,704	Exeter	728	1,654			
Ancaster Twp.	381	V.A.						
Arkona	57	403	Fergus	1,380	2,759	Palmerston	589	1,400
Aurora	1,395	2,821	Fonthill	152	860	Paris	1,809	4,604
Aylmer	841	1,985	Forest	591	1,562	Parkhill	220	1,029
Ayr	265	760	Forest Hill	6,238	12,172	Petrolia	866	2,768
						Plattsville	147	P.V.
Baden	547	P.V.	Galt	10,866	15,126	Point Edward	1,676	1,199
Beachville	763	P.V.	Georgetown	1,857	2,452	Port Colborne	1,394	6,928
Beamsville	463	1,227	Glencoe	180	763	Port Credit	902	1,934
Belle River	168	836	Goderich	1,809	4,674	Port Dalhousie	1,090	1,599
Blenheim	422	1,873	Granton	77	P.V.	Port Dover	494	1,790
Blyth	163	662	Grimsby	810	1,988	Port Rowan	93	700
Bolton	262	629	Guelph	12,011	23,074	Port Stanley	866	824
Bothwell	118	683				Preston	4,179	6,656
Brampton	2,967	6,157	Hagersville	1,003	1,524	Princeton	161	P.V.
Brantford	21,675	31,622	Hamilton	153,317	164,719			
Brantford Twp.	1,113	V.A.	Harriston	503	1,292	Queenston	158	P.V.
Bridgeport	149	P.V.	Harrow	537	1,092			
Brigden	83	P.V.	Hensall	190	686	Richmond Hill	548	1,295
Brussels	141	784	Hespeler	2,792	2,938	Ridgetown	485	1,986
Burford	338	P.V.	Highgate	96	322	Riverside	1,113	5,235
Burgessville	48	P.V.	Humberstone	534	2,831	Rockwood	143	P.V.
Burlington	1,598	3,925	Ingersoll	3,390	5,757	Rodney	123	758
Burlington Beach	442	1,474						
			Jarvis	193	513	St. Catharines	28,845	34,541
Caledonia	314	1,430	Kingsville	541	2,453	St. Clair Beach	104	138
Campbellville	41	P.V.	Kitchener	27,471	35,456	St. George	159	P.V.
Cayuga	111	700				St. Jacobs	335	P.V.
Chatham	6,105	17,184	Lambeth	123	P.V.	St. Marys	1,739	4,009
Chippawa	308	1,228	LaSalle	279	907	St. Thomas	7,695	17,045
Clifford	107	491	Leamington	1,533	6,048	Sarnia	10,820	18,599
Clinton	738	1,879	Listowel	1,620	2,984	Scarborough Twp.	4,692	V.A.
Comber	144	P.V.	London	37,518	77,105	Seaforth	930	1,782
Cottam	69	P.V.	London Twp.	449	V.A.	Simcoe	2,407	6,340
Courtright	48	355	Long Branch	1,173	4,258	Smithville	155	P.V.
			Lucan	197	643	Springfield	65	382
Dashwood	115	P.V.	Lynden	125	P.V.	Stamford Twp.	2,830	8,275
Delaware	75	P.V.	Markham	435	1,175	Stoney Creek	226	933
Delhi	370	2,430	Merlin	73	P.V.	Stouffville	356	1,198
Dorchester	87	P.V.	Merritton	11,655	2,916	Stratford	7,660	17,163
Drayton	125	528	Milton	1,445	1,915	Strathroy	1,583	2,834
Dresden	415	1,525	Milverton	401	994	Streetsville	255	701
Drumbo	116	P.V.	Mimico	2,465	8,354	Sutton	317	949
Dublin	53	P.V.	Mitchell	784	1,670	Swansea	2,622	6,907
Dundas	2,938	5,245	Moorefield	53	P.V.			
Dunnville	1,408	3,916	Mount Brydges	100	P.V.	Tavistock	704	1,080
Dutton	249	830				Tecumseh	438	2,391
East York Twp.	7,845	41,578	Newbury	29	288	Thamesford	244	P.V.
Elmira	1,367	2,069	New Hamburg	664	1,441	Thamesville	190	816
Elora	510	1,185	Newmarket	2,058	3,800	Thedford	144	598
Embro	159	420	New Toronto	12,267	9,469	Thorndale	93	P.V.
			Niagara Falls	10,826	20,371	Thorold	2,545	5,284
			Niagara-on-the-Lake	1,120	1,764	Tilbury	1,392	1,923
			North York Twp.	9,907	V.A.	Tillsonburg	1,338	4,602
			Norwich	409	1,301	Toronto	343,788	657,612
						Toronto Twp.	3,350	V.A.

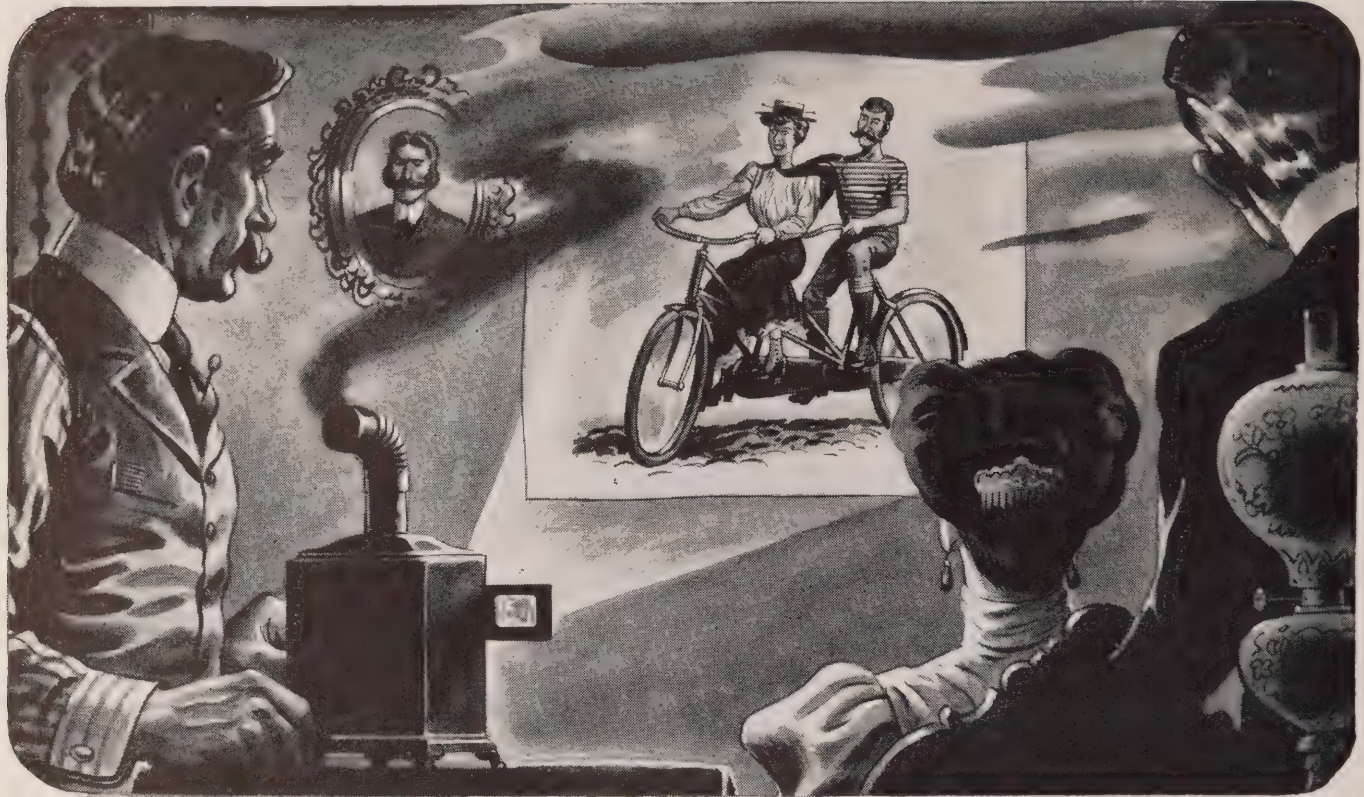


## MUNICIPAL LOADS, JUNE, 1944

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Wallaceburg -----	4,100	4,802	Neustadt -----	46	431	Lakefield -----	393	1,301
Wardsville -----	35	221	Orangeville -----	744	2,558	Lanark -----	78	686
Waterdown -----	263	867	Owen Sound -----	6,103	13,559	Lancaster -----	41	570
Waterford -----	424	1,294	Paisley -----	109	530	Lindsay -----	3,846	8,345
Waterloo -----	5,926	8,968	Penetanguishene -----	1,013	4,177	Madoc -----	193	1,130
Watford -----	400	1,023	Port Carling -----	222	520	Marmora -----	137	1,004
Welland -----	11,147	14,899	Port Elgin -----	553	1,415	Martintown -----	41	P.V.
Wellesley -----	143	P.V.	Port McNicoll -----	94	950	Maxville -----	99	811
West Lorne -----	202	768	Port Perry -----	327	1,175	Millbrook -----	95	749
Weston -----	4,734	6,333	Priceville -----	10	P.V.	Morrisburg -----	286	1,484
Wheatley -----	189	761	Ripley -----	106	420	Napanee -----	1,426	3,241
Windsor -----	52,009	118,040	Rosseau -----	36	305	Newcastle -----	168	701
Woodbridge -----	670	1,110	Shelburne -----	275	1,053	Norwood -----	149	710
Woodstock -----	8,031	12,339	Southampton -----	617	1,467	Omeme -----	195	630
Wyoming -----	72	538	Stayner -----	319	1,106	Orono -----	95	P.V.
York Twp. -----	19,093	77,175	Sunderland -----	84	P.V.	Oshawa -----	18,043	26,610
Zurich -----	153	P.V.	Tara -----	119	510	Ottawa -----	36,209	150,816
(66½ Cycle)			Teeswater -----	163	973	Perth -----	1,868	4,197
Bronte -----	156	P.V.	Thornton -----	28	P.V.	Peterborough -----	12,352	24,977
Oakville -----	1,210	3,369	Tottenham -----	106	532	Pictou -----	1,278	3,400
Trafalgar Twp. -----	627	V.A.	Uxbridge -----	360	1,480	Port Hope -----	2,499	4,997
GEORGIAN BAY DIVISION			Victoria Harbour -----	73	979	Prescott -----	1,590	3,318
(60-Cycle)			Walkerton -----	1,037	2,534	Richmond -----	72	428
Alliston -----	445	1,700	Waubaushe -----	116	P.V.	Russell -----	74	P.V.
Arthur -----	167	1,089	Warton -----	305	1,750	Smiths Falls -----	3,124	7,741
Bala -----	175	355	Windermere -----	50	117	Stirling -----	333	947
Barrie -----	4,327	9,559	Wingham -----	737	2,149	Trenton -----	5,068	8,183
Beaverton -----	304	941	Woodville -----	78	439	Tweed -----	280	1,181
Beeton -----	167	617	EASTERN ONTARIO DIVISION			Warkworth -----	72	P.V.
Bradford -----	269	1,041	(60-Cycle)			Wellington -----	266	948
Brechin -----	69	P.V.	Alexandria -----	232	1,976	Westport -----	106	725
Cannington -----	249	761	Apple Hill -----	48	P.V.	Whitby -----	1,489	4,236
Chatsworth -----	86	333	Arnprior -----	1,209	4,019	Williamsburg -----	89	P.V.
Chesley -----	608	1,812	Athens -----	115	626	Winchester -----	410	1,017
Coldwater -----	196	545	Bath -----	45	325	THUNDER BAY SYSTEM		
Collingwood -----	2,823	6,249	Belleville -----	7,628	15,498	(60-Cycle)		
Cookstown -----	103	P.V.	Bloomfield -----	144	636	Fort William -----	14,916	30,370
Creemore -----	177	661	Bowmanville -----	2,631	3,850	Nipigon Twp. -----	213	V.A.
Dundalk -----	232	686	Brighton -----	451	1,462	Port Arthur -----	22,728	24,217
Durham -----	429	1,874	Brockville -----	5,176	11,112	NORTHERN ONTARIO		
Elmvale -----	175	P.V.	Cardinal -----	401	1,602	PROPERTIES		
Elmwood -----	76	P.V.	Carleton Place -----	2,040	4,143	Nipissing District		
Flesherton -----	60	452	Chesterville -----	312	1,094	(60-Cycle)		
Grand Valley -----	150	645	Cobden -----	119	643	North Bay -----	4,526	16,013
Gravenhurst -----	1,095	2,261	Cobourg -----	2,330	5,907	Patricia District		
Hanover -----	1,375	3,190	Colborne -----	233	960	(60-Cycle)		
Holstein -----	20	P.V.	Deseronto -----	259	1,002	Sioux Lookout -----	298	1,967
Huntsville -----	1,198	2,943	Finch -----	106	396	Sudbury District		
Kincardine -----	797	2,483	Frankford -----	161	1,095	(60-Cycle)		
Kirkfield -----	27	P.V.	Hastings -----	120	823	Capreol -----	259	1,660
Lucknow -----	427	856	Havelock -----	136	1,103	Sudbury -----	9,192	35,812
MacTier -----	134	V.A.	Iroquois -----	273	1,123			
Markdale -----	198	776	Kemptville -----	348	1,230			
Meaford -----	792	2,759	Kingston -----	14,593	29,545			
Midland -----	4,714	6,754						
Mildmay -----	166	764						
Mount Forest -----	555	1,936						



# HYDRO *Lightens* The Way!



## THEY WOULDN'T HAVE BELIEVED IT!

● The gay nineties weren't so gay, by today's standards. Think how the folks then would have felt had anyone told them of the wonders of the modern motion picture theatre. They wouldn't have believed it!

In the transition from those days to this modern age we owe a great deal to electricity. Today—we are dependent upon it in hundreds of ways. It will do more for us in the days to come!

In the future Hydro will serve industry, the home and the farm in even greater measure than in the past. Plan now, to let Hydro lighten your tasks and make your living more comfortable in the brighter days ahead.



**THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO**



# HYDRO! News



OCT 12 1944

SHINE ON . . .  
HARVEST MOON





*"Our fighting men  
must be backed  
to the limit!"*

• Let us face facts in this 7th Victory Loan. Victory in Europe must be complete. Hong Kong must be avenged. No victory anywhere can satisfy until we have freed Canadian prisoners everywhere in the world—until our fighting men and women are home and re-established, they need your full support.

The cost of war has mounted as we approach the end. Your dollars are as essential now as ever before. Our forces must continue to have the finest in equipment. As long as our men and women risk their lives in battle, we at home must give our financial support to the limit.



*Invest in Victory*  
**Buy VICTORY BONDS**  
*Buy one more than before*

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO





# THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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## The Front Cover



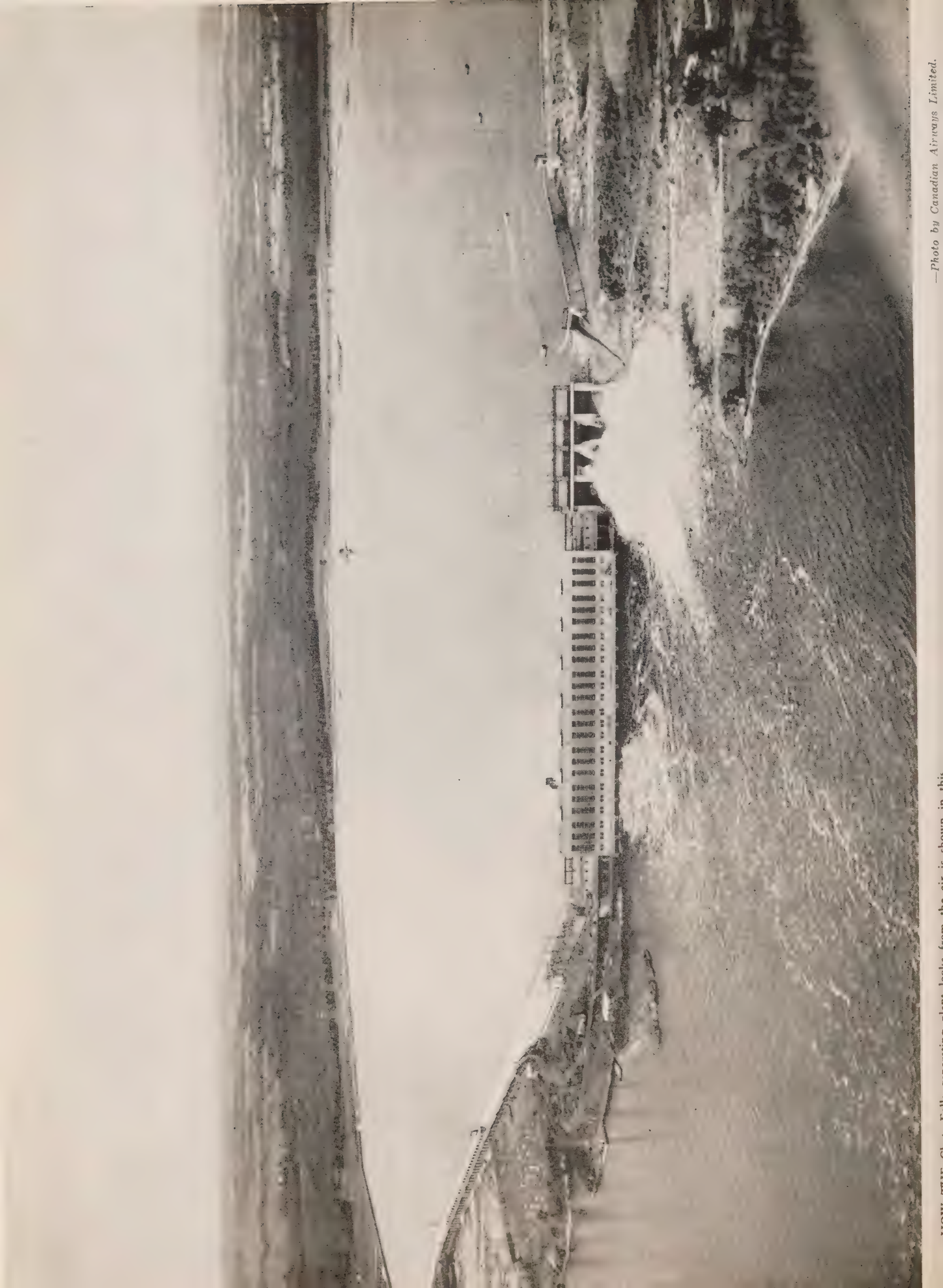
**O**CTOBER brings crisp,  
clear days, a glow to  
the cheeks, and of an even-  
ing, a song to the lips as  
the moon floats like a yel-  
low disc through the flece-  
lined sky. It is, therefore,  
appropriate that this month's  
front cover should portray a  
symbolic autumn setting  
and bear the title: "Shine  
on Harvest Moon."

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—Photo by Canadian Aircrews Limited.

view from the dam. The dam is shown in this



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### POWER RESTRICTIONS OFF

**W**HEN Hon. C. D. Howe, minister of munitions, announced the lifting of restrictions in the use of electricity, effective October 1, it was good news for these Hydro municipalities and consumers whose co-operation made it possible for the Commission to save a maximum of 250,000 horsepower during peak load periods over the past two years.

Upon receiving the official announcement, Dr. Thomas H. Hogg, chairman of The Hydro-Electric Power Commission of Ontario, immediately made public acknowledgment of the Commission's appreciation of the way in which both mandatory and voluntary restrictions have been observed.

"The Commission", he said, "will not forget the patriotic and loyal co-operation of municipalities and consumers in conserving power when it was so urgently required to provide the driving force for Southern Ontario's war industries."

The Hydro chairman also stated that conscientious observance of the restrictions, which became effective on September 20, 1942, had, in itself, represented a far-reaching contribution to the part Canada is now playing in the onward march to victory.

Mr. Howe's announcement means that the Dominion Power Controller's Order No. P.C. 5 is a thing of the past, and that consumers are now at liberty to make greater use of Hydro power for such purposes as street lighting, store window lighting, ornamental lighting, electric signs, heating and for all types of appliances in the home.

### COMPLETE VICTORY

**R**ECOGNITION of the fact that it's going to take more than force of arms to achieve complete victory over the aggressor powers is all-important at this crucial stage in the progress of the war.

One of the grave dangers of the hour, as Allied leaders have warned, is that the sweeping march of the United Nations on all battle fronts may stimulate over-optimism and a tendency to "ease up" on the home front.

Actually, with the unconditional surrender of Germany—and that may come at any hour—the Allies will be confronted with new problems of formidable magnitude. Efficient handling of these problems, such as rehabili-

tation and the feeding of people in war-ravaged Europe, is part of the price which must be paid for victory. At the same time, it is a moral obligation which only a callous and unprincipled nation would seek to evade.

Complete victory, in brief, demands that the Allies press on, without faltering, right to the end of the road, taking all obstacles in their stride. It demands, too, that the folk on the home front have a clear and realistic conception of their duty as individuals in helping achieve the kind of peace which will endure.

One of these duties—a very vital one—is to continue investing savings to the limit in victory loans as long as the need for these loans exists.

This month, when Canada's seventh victory loan is launched, Canadians will again have the opportunity of expressing their determination that they intend to do their part in finishing the job in the way it must be finished. The slogan this time is both fitting and significant: "Invest In Victory."

### EXPRESSION OF FAITH

**D**R. THOMAS H. HOGG, chairman of The Hydro-Electric Power Commission of Ontario, had good news for the gold mining industry when he addressed the O.M.E.A. District No. 3 meeting at Port Arthur last month. Effective January, 1945, he announced, gold mines in all districts throughout Northern Ontario will pay \$27.50 per horsepower per annum for the first block of 5,000 horsepower.

The present rate in the Porcupine, Kirkland Lake, Larder Lake and Matachewan areas is \$32.50, and that in the Thunder Bay and Patricia districts \$35.

As the Hydro chairman pointed out, it is designed to help producing mines, to return quickly to pre-war production, to aid marginal ore mines and stimulate new operations. In contributing in a tangible way to this three-fold purpose, the Commission will also be contributing indirectly to the re-employment of hard rock miners who are now serving in the armed forces.

The move is an expression of Hydro's confidence in the future of Ontario's gold mining industry, and in the role which the far-flung Northland will play in the fulfilment of Canada's economic and industrial destiny in the post-war years.

# Lakehead CONVENTION



THIS WAS the delegates' first view of the picturesque Alexander Landing development.

**S**UBSTANTIAL reductions in power rates to gold mines throughout Northern Ontario were announced by Dr. Thomas H. Hogg, chairman, The Hydro-Electric Power Commission of Ontario, when addressing delegates to District No. 3 O.M.E.A. convention at the Prince Arthur Hotel, Port Arthur, on September 7.

Representing an important contribution to the expected comeback of the mining industry after the war, the new rate, which becomes effective in January, 1945, is \$27.50 per horsepower per annum for the first block up to 5,000 horsepower. The present rate for mines served by the Abitibi Canyon development is \$32.50, and that for properties in the Thunder Bay and Patricia districts is \$35.

Dr. Hogg pointed out that in the depression of the early thirties the mines of Northern Ontario were a great

source of strength to the whole province. "It may well be," he continued, "that in the rehabilitation period to follow this war, the mining and associated fields will be a basic foundation of great value providing for many of our returned men a career in civil life not entirely devoid of the element of adventure to which their war years have accustomed them.

"Apart from the proved existence of zones of payable ore no factor has been more important to the success of Northern Ontario mine fields than the provision of ample supplies of low-cost electric power. While there are in Northern Ontario many mines so rich that the cost of power is not a deciding factor, there are many more whose economic working is only possible because ample low-cost

*(Continued on page 6)*





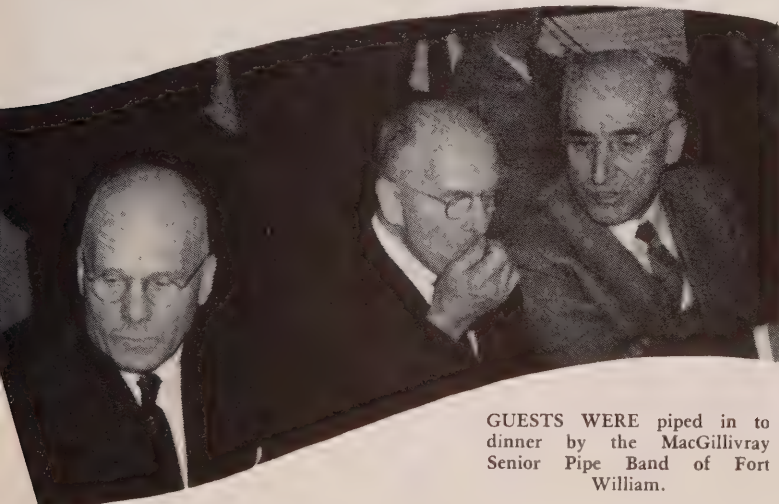
THREE of the head table guests (left) were M. J. McHenry, chief priorities officer, H.E.P.C.; Sam Ashton, Port Arthur commissioner; and Osborne Mitchell, secretary, H.E.P.C.

LOWER MINING rates were announced by Dr. T. H. Hogg, chairman, H.E.P.C. (below); on his right is J. R. Pattison, chairman, Fort William Hydro-Electric Commission, and on his left, R. G. Walsh, Port Arthur commissioner; W. Ross Strike, H.E.P.C. commissioner, and Clarence H. Moors, Fort William commissioner.



ONE OF the speakers at the convention was Hon. George H. Challies, Government representative on the Commission, shown here.

THREE OTHER head table guests (below) were Clarence H. Moors, R. T. Jeffery, chief municipal engineer, H.E.P.C., and mayor Garfield Anderson, Fort William.



GUESTS WERE piped in to dinner by the MacGillivray Senior Pipe Band of Fort William.

THE BOAT trip to Port Arthur was quite rough and W. Ross Strike (below), intimated that he had seriously considered asking for a rebate on his meal tickets.





## LAKEHEAD CONVENTION

*(Continued from page 4)*

power permits the handling of large volumes of low grade ore," he continued.

Dr. Hogg warned that there was always an element of risk involved in serving mines, and said it was for that reason the government undertook in 1930 to finance the system known today as Northern Ontario Properties which serves the mines and mining townsites.

He assured the delegates that the added risk involved in decreasing the power rate when the load was about half of its pre-war size and the resulting loss in revenue would not affect the financial stability of the Thunder Bay system, since the government, through the Northern Ontario Properties, had guaranteed to make good any loss.

The evening session of the convention was presided over by R. G. Walsh, vice-president of District No. 3, O.M.E.A. Lieut. Cmdr. Hugh Wilson, R.C.N.V.R., commanding officer of H.M.C.S. Griffen, which has been adopted by the city of Port Arthur, proposed the toast to the King.

Civic greetings were extended by mayor Garfield Anderson, Fort William, and mayor Charles W. Cox, Port Arthur, while Sam Ashton, of the Port Arthur Public Utilities Commission, introduced the guests and delegates.

Interest in the convention, which was one of the best to be held in the lakehead cities, was further heightened by the presence of all three members of The Hydro-Electric Power Commission of Ontario.

Dr. Hogg said that the new fourth unit now being installed at the Alexander Landing development would add 20,000 horsepower to the plant's capacity and that it would take care of the present and immediate future needs of the system.

### Can Double Capacity

"The total power developed at Cameron Falls and Alexander Landing with the fourth unit installed will be about 145,000 horsepower," the chairman said, "but due to the addition of Ogoki water, the Nipigon river capacity can easily be doubled when necessary by constructing new plants at Victoria Rapids and Pine Portage."

Here the chairman interjected the remark that Lake Nipigon was the greatest natural storage reservoir in the world today, and provided sufficient storage to enable the Commission to equalize the flow of the river over a normal year.

He pointed out that there were a number of additional sources of power which were available to supplement the potentiality of the undeveloped sites on the Nipigon river. Investigations were being conducted at the power site on the Aguasabon river, close to its outlet into Lake Superior. Preliminary estimates indicate that a plant of 20,000 horsepower may be economically constructed at this point.

Further east, but still within reasonable transmission distance, the Hydro chairman stated, there were two sites on the White river, having an aggregate capacity of about 16,000 horsepower, and on the Pic river an additional 5,000 horsepower was available. To the west of Silver Falls, on

the Kaministiquia river, there was an attractive site where from 25,000 to 30,000 horsepower could be developed.

"You can, therefore, rest assured," remarked Dr. Hogg, "that the Commission will be ready and well prepared to develop additional power resources for the Thunder Bay system whenever and wherever new power requirements are needed."

The chairman predicted that within a very few years with an influx of population and the development of the country immediately to the east of the Thunder Bay district the Thunder Bay system might be joined with the Southern Ontario system.

Dr. Hogg pointed out that the Commission had been able to bring about rural amalgamation and unification of rural rates because of the financial assistance given by the province as part of its aid to agriculture. The new set-up, he explained, apportioned the benefits from provincial grants where it would do the most good. The low uniform rates now in effect, he emphasized, presented a challenging opportunity to the farmer to make more and better use of Hydro.

### Predicts Further Extensions

Dr. Hogg declared that the Thunder Bay rural power district had benefited by the relaxation of restrictions which had been imposed by the Dominion Metals Controller on rural extensions. He predicted that further rural extensions would be made in the Thunder Bay district and also in the Rainy River district when materials and labour were released. He also said that he looked forward to the time when Hydro service would be as universal throughout rural Ontario as it was in the cities and towns.

### Hydro Controlled by Commission

That Hydro was not government ownership but rather municipal co-operation was emphasized by Hon. George H. Challies, government representative on the Hydro Commission, in the course of an address at the luncheon meeting of the convention.

"The control of Hydro legally and in practice is, and always has been, the function of the Commission," declared Mr. Challies. "I am not saying that a government could not influence the control of Hydro by appointing to its board three of its supporters who could follow its direction. That may have happened in the past and perhaps could happen in the future—but I can assure you it is not happening at present."

"The present commission is composed of Dr. Hogg, an independent, impartial judge; Mr. Ross Strike, representing the municipalities, and myself representing the government, which means the people. With such a set-up I do not think that anyone could claim that there are politics in Hydro today, or that any undue influence can be exerted by the government on the Commission," Mr. Challies said.

The speaker reminded the delegates that it was important to remember that the government had loaned nearly \$200 million to the Commission, and that obviously the government's first responsibility was a financial one to ensure that the Commission's operations were carried out

*(Continued on page 8)*





ANGUS RICHARDSON, construction superintendent, and Dr. Thomas H. Hogg discuss features of the fourth unit now being installed at Alexander Landing.



THE NEW manager at Fort William, A. W. H. Taber, was chatting with Dr. M. P. Benger, chairman of the Port Arthur commission, and mayor Garfield Anderson when this photograph was taken.



TWO OF the delegates (shown here) had apparently presented a question which required careful thought on the part of R. T. Jeffery.



MUSIC RENDERED by the pipe band was enjoyed by Jack Irwin of Fort William and T. C. James, H.E.P.C. system engineer.



STOP LOGS were put in one of the sluiceways at Cameron Falls while the delegates were inspecting the plant.



## LAKEHEAD CONVENTION

(Continued from page 6)

in such a manner that this debt would be repaid. Since the Commission now issued its own bonds, which were guaranteed by the government, it was the latter's responsibility to see that Hydro met its bond obligations.

Mr. Challies said the government's second responsibility was associated with rural service. Today the Commission operated 20,000 miles of rural lines which cost \$40 million, half the cost of which was met directly by the government. The government was anxious to have Hydro build more rural lines, but it had to assure itself that the money was spent to the best advantage.

The government's third responsibility was in the North country where it owned a large generating and transmission system called Northern Ontario Properties. This system, worth \$40 million, was operated by the commission for the government, the speaker stated.

"How does this dove-tail in with my statement that the Commission controls Hydro?" Mr. Challies continued.

"Since I have been on the Commission, Hydro has floated a new bond issue. All the details in connection with the issue were handled by Hydro and the Commission recommended to the government the type of bonds it wanted. The government accepted the recommendation.

### Hydro Not in Politics

"The Commission recommended to the government that new uniform rural rates be adopted. The government accepted the recommendation.

"The Commission, as trustee for the government for Northern Ontario Properties, recommended that mining power rates be reduced. That recommendation was accepted.

"I just give you these illustrations to show you that the Commission controls Hydro and that Hydro today is not in politics. I am sure representatives of Hydro municipalities will agree, that is as it should be," he said.

The government member of the Commission said that in these days of loose thinking and more loose talking the Ontario Hydro was held up as an example of public ownership by those advocating governmental socialization of business. Continuing, he emphasized that in reality Hydro was not government ownership but rather municipal co-operation, and in the light of some government owned enterprises declared that the further Hydro was divorced from governmental dictation the better it would serve the people and the safer it would be financially. He urged the delegates to be on their guard and to see that outside influences, anxious to gain control of Hydro and its reserves for selfish reasons, should not succeed.

"Hydro is gradually but surely bringing the amenities of modern civilization to all classes of our people through the extensive use of man's greatest and universal servant, electricity," Mr. Challies concluded.

W. Ross Strike, president of the O.M.E.A. and the third member of the Commission, who also spoke at the noon luncheon, declared that the time had now come when

there should be even closer co-operation between the O.M.E.A. and the A.M.E.U. and urged that both the Commission and the municipalities take a greater interest in public relations.

"We need the knowledge of both the men who direct the policy of Hydro in the various municipalities and those who are charged with its operation if we are to solve the problems which are about to be faced by Hydro in Ontario," declared Mr. Strike.

"Hydro, above all, can afford to turn its eyes toward the public relations field. A monopoly is always vulnerable to the charge of high handedness. The local municipalities should make an effort to tie in with the efforts of the provincial body in this matter and attempt to satisfy every customer that he is being fairly treated and that he is getting the best possible service from his publicly owned Hydro system. School children should be given a greater understanding and knowledge of Hydro and the campaign in this direction, already started by the Commission, should be continued and enlarged.

### Trustees of All the People

Mr. Strike maintained that Hydro should be a leader in bringing better living conditions to the people of Ontario, and that the first step in attaining this goal was the complete co-operation between the government, the Commission and the local municipality. He said all three of these principals had to remember that they were trustees of all the people of the province for the development and distribution of electricity and all classes of citizens had to be given fair consideration.

"Administrative controls must be flexible enough to meet changing conditions and keep abreast of the problems of the transition period which will follow the cessation of hostilities," continued Mr. Strike. "Each of us must give our own locality the best possible administration and fit our local plans into the broader plan of provincial administration. Thus only can we keep in step and march along with the other principals and make this Hydro enterprise of ever increasing benefit to the people of Ontario," he concluded.

Should a smelter plant for the processing of Steep Rock iron ore be built at the head of the lakes, and suitable contracts be negotiated between the company and the H.E.P.C., power will be made available, R. T. Jeffery, chief municipal engineer, assured delegates at the afternoon business session of the convention.

Ontario will be in a position to compete with the rest of Canada in attracting industry in the post-war years as Ontario will have a plentiful supply of cheap electrical power as well as the necessary skilled labour, Hon. George H. Challies, said in answer to C. H. Moors, chairman of the Fort William Hydro-Electric Commission.

An interesting side trip was made to the Cameron Falls and Alexander Landing generating stations. Here the delegates were entertained at a typical construction camp dinner in the cafeteria. Following the inspection of the Cameron Falls plant the party returned to Port Arthur for the closing ceremonies of the convention.





# District No. 2 MEETING

R. BEAULIEU of Penanguishene (left), newly elected president of O.M.A., District No. 2, shakes hands with the retiring president, R. D. Boyes of Alliston.



IN THIS group are members of the incoming committee front row, left to right: mayor W. G. Case, R. J. Beaulieu, G. F. Hutcheson, Walter Dixon, C. J. Halliday. Second row: A. J. Walker, D. L. Regimbal, R. D. Boyes and H. S. N. Denef.

**B**Y building up reserves, Hydro municipalities can prepare for the time when war loads will drop off, and thus avert the necessity for increasing rates in the post war period.

This point was strongly emphasized by R. T. Jeffery, chief municipal engineer of The Hydro-Electric Power Commission of Ontario, when speaking at Barrie on

September 21 on the occasion of the annual meeting of the Georgian Bay Municipal Electric Association.

Subjects ranging from that of reserves to accident prevention, coupled with a statement by M. J. McHenry, H.E.P.C. director of sales promotion, that a certain number

*(Continued on next page)*



HEAD TABLE guests, shown here from left to right, include: J. F. Craig; K. R. Christie, K.C.; mayor D. F. MacLaren, Barrie; mayor W. G. Case, Owen Sound; Hon. G. H. Challies, R. J. Beaulieu, W. Ross Strike, C. J. Halliday, R. T. Jeffery, R. D. Boyes and T. C. James.



## DISTRICT No. 2

(Continued from previous page)

of electrical appliances should be on the market early next year, featured the proceedings.

With R. J. Beaulieu of Penetanguishene, newly elected president of District No. 2, in the chair, delegates from all parts of the system met in the Odd Fellows Hall for the afternoon session, while the evening banquet was held in the Parish Hall of Trinity Church.

In his address, Hon. George H. Challies, government representative on the Commission, reminded the delegates that the 36th Annual Report, published recently, showed that Hydro was a five hundred million dollar business, owned by, and operated for, the people of Ontario.

W. Ross Strike, president of the O.M.E.A., and a member of the provincial Commission, who also spoke at the evening banquet, pointed out that Hydro was a co-operative movement in which the Government, the provincial Commission and the municipalities all had equal responsibility.

### Hydro Not Static Thing

"We must," he said, "all shoulder this responsibility, and if we all pull together, there is no doubt about the future of Hydro in this province. Hydro is not a static thing, we must be prepared to meet changing conditions. We have to plan far ahead and our place is in the vanguard, not in the rear of progress."

Wills MacLachlan, head of the H.E.P.C. employees relations department, urged all the municipalities to stress the importance of accident prevention. He said that great strides have been made through various means in this connection, and also that some 275 Hydro municipalities were paying an assessment on their payrolls to the Workmen's Compensation Board.

Statistics showed, he continued, that over a 25-year

period, fatal accidents had been reduced to less than one-third; permanent partial disability cases, such as the loss of a hand or arm, had been reduced to 15 per cent, and the total number of accidents had been reduced to almost one-half.

"This is good business," he concluded, "it results in a monetary saving to the employer and improves relations between the employer and employee. It is a humanitarian thing."

T. C. James of the H.E.P.C. municipal department, when speaking on the early history of the Georgian Bay division of the Southern Ontario system, likened the two original municipalities, Penetanguishene and Midland, to the father and mother of the Georgian Bay system, and declared that all the other municipalities, which have been born into the Georgian Bay division of the Hydro family since that time, might be considered as their children.

### New Officers Elected

"This Georgian Bay family," he went on, "now consists of 86 husky babies, 64 of which are urban municipalities and 22 rural power districts, and all of which have reached their maturity."

During the business session the following officers of O.M.E.A. District No. 2 were elected for the ensuing year: president, R. J. Beaulieu, Penetanguishene; first vice-president; G. F. Hutcheson, Huntsville; second vice-president, Walter Dixon, Arthur; directors: Mayor W. G. Case, Owen Sound; C. J. Halliday, Chesley; D. L. Regimbal, North Bay; W. E. Theaker, Paisley; J. F. Craig, Barrie; S. R. Sarjeant, Orillia; A. J. Walker, Wingham.

Many tributes were paid to the outstanding service rendered by Herman S. N. Denef, who has been secretary of this Association for the past twelve years, and who has taken over the duties for another year.



MEMBERS OF the Barrie commission (shown here) are, from left to right: W. M. Salter, general manager and secretary; mayor D. F. MacLaren, J. F. Craig, chairman, and J. B. Dougall, commissioner.





HERE ARE some photographic impressions recorded by the Hydro News' cameraman at the Gergian Bay Municipal Electric Association held at Barrie recently.





# To Barrie



THIS IS the visitor's first impression of Barrie as he looks from the train window across Kempenfeldt Bay.

**G**ATEWAY to Georgian Bay, Muskoka and the North, and one of the busiest highway hubs in Ontario, Barrie which ranks among the most progressive towns of Canada, has many diversified industries, which benefit directly from an abundance of low-cost Hydro power.

These interesting facts were mentioned by energetic and genial W. M. Salter, who has been general manager and secretary of the Barrie Public Utilities Commission for the past nine years, when interviewed by Hydro News recently.

The capital of Simcoe County, Barrie is picturesquely located at the head of the blue waters of Kempenfeldt Bay, which is an arm of lake Simcoe. Its history dates back to 1615 when, it is recorded, that Samuel de Champlain stood on the north shore of lake Simcoe, the first white man to view this territory. In 1680 the LaSalle expedition landed by canoe in this locality, but it was not until 1833 that the town was laid out. Commodore Robert Barrie, who was stationed at Kingston, Upper Canada, made a tour of inspection of the Great Lakes about this time. This combined with the fact that many of the first residents were retired naval officers resulted in the settlement being named Barrie.

It is interesting to note that some of the older streets are named after naval officers, such as Nelson and Blake streets. In 1896 Allandale, which is generally known as Ward 6, became a part of Barrie.

An interesting phase of this municipality's progress is the growth of Hydro. The first agreement was entered into with the H.E.P.C. in 1912, following a demonstration showing the use of electricity for cooking, washing and other household uses. Sir Adam Beck was present on that occasion, and the following year, delivery of power was made.

Before the inauguration of Hydro, a steam plant generated power for domestic and commercial use, and street lighting was obtained from Midhurst, where a small quantity of energy was generated by water power. At that time, the original commission comprised J. H. Bennett, who served as chairman for 13 years; Simon Dymont, commissioner; and W. A. Boys, mayor.

The initial load was 207 horsepower, and at the present time it is approximately 4,327 horsepower, serving 2,400

*(Continued from page 23)*



# LOWER MINING POWER RATE SEEN AID TO RECONVERSION

**Recession In Mining Industry Due To Wartime Conditions—Expect  
Revival Of Activity When Hostilities Cease—New  
Rate Effective In January, 1945.**

An Address By DR. THOMAS H. HOGG,  
Chairman, The Hydro-Electric Power Commission of Ontario, at District No. 3, Ontario  
Municipal Electric Association Convention in Port Arthur, September, 1944.

IT is heartening on these annual occasions to look back and compare the war situation with conditions one or two years ago. Two years ago the allied nations were just beginning to receive the production from the great war plants that had been under rapid construction in the United States. Canada had been making an important contribution for some time. A year later a great flood of war equipment was pouring from United States plants to augment the magnificent accomplishment of the industrial front in Great Britain which had supplied the "tools" to hold the enemy at bay during the crucial earlier years. This augmented, and I think we may say overwhelming, production of war equipment and supplies—far exceeding the output of our enemy—provided the material needs to enable the armies of the United Nations to achieve the almost continuous victories of the past year.

While far removed from the actual fighting front and the terrible experiences endured in Great Britain, we have, nevertheless, had before us at all times a visual record of the war's progress in the measure of war power loads and the output of war materials.

Today, with power loads reaching a maximum and with the forces of the United Nations marshalled for maximum effort, after years of preparation, we are profoundly conscious of the fact that we are well advanced in the process of grinding our enemies' empires and aspirations into dust. But, that dust, as we all know, is settling now like a pall upon civilization and will necessitate a continuation of our productive efforts for a long time before it can be cleaned away.

The United Nations, through U.N.R.R.A. are providing relief and help in rehabilitating occupied territories—a big programme that will continue to employ a large percentage of our productive output in many industries for some time to come. This call upon Canada's and particularly Ontario's manufacturing industries, must be woven into our post-war economy and allowances must, therefore, be made for it in our post-war plans.

## Ogoki Diversion

I am sure that you will be glad to know that the beneficial results of the Ogoki diversion have fully met the anticipations of the Commission. For more than a year now the diverted waters of the upper Ogoki drainage basin have been pouring across the height-of-land to swell the waters of Nipigon lake and river and to provide additional diversion at Niagara both for the new DeCew Falls plant and to increase the output of energy from existing plants on the Niagara river.

Let me try to give you in a few words the magnitude of the water flow resulting from this beneficial undertaking. The average yearly flow of the Nipigon river as revealed by careful measurement during the past twenty odd years has been 8,400 cubic feet of water per second. The additional flow of 4,000 c.f.s. has increased this flow by more than 40 per cent.

Nipigon lake with its area of over 1,500 square miles affords an immense natural storage reservoir, very large in proportion to the drainage basin. The Virgin Falls dam, constructed by the Commission at its outlet, enables the Commission to store water over this area between a low water elevation of 846 feet and a high water elevation of 855 feet, a range of 9 feet. The storage thus provided on lake Nipigon was sufficient to enable the Commission to equalize the flow of the river over a normal year but in practice, of course, the flow is regulated to meet the varying power demands. When surplus water was available it was utilized to provide power for the operation of steam boilers.

The storage available on lake Nipigon for the most part is able to receive the additional flow from the Ogoki, to store it as required, and to release it to meet the varying power demands. Actually it enables the Commission to operate both the Cameron Falls and Alexander developments more efficiently and justifies the installation of a fourth unit at the Alexander plant to which I shall refer later.



Most of you understand the Ogoki diversion was undertaken largely to secure additional water at Niagara. It was therefore constructed as a joint enterprise of the Thunder Bay system and the Niagara system, now known as the Niagara division of the Southern Ontario system. As is the policy with regard to all joint co-operative developments the cost will be appropriately divided according to the resulting benefits.

An important benefit resulting from the Ogoki diversion is that it enables the Commission to supply to the pulp and paper companies a large quantity of electrical energy for use in electric steam boilers for the development of process steam. This not only brings in additional revenue to the Thunder Bay system but greatly reduces the amount of fuel that must be imported from the United States. Most of the transformer equipment and the necessary electric boilers were installed some years ago.

#### **DeCew Falls Development**

On October 15 last, the Commission placed in operation in the Niagara peninsula a new development at DeCew Falls. The water required for this plant is provided by the increased diversion permitted at Niagara as a result of the Ogoki undertaking. With its single unit rated at 65,000 horsepower but developing under favourable conditions 71,000 horsepower, this plant generates nearly as much power as the Cameron Falls plant on the Nipigon river.

#### **Additional Unit at Alexander Generating Station**

As forecast in my talk to you last year the Commission decided to add a fourth unit at the Alexander generating station. Provision for this unit was made when the generating plant was constructed in 1930 by including the necessary headworks section as part of the original dam. This fourth unit will have a capacity of 20,000 horsepower instead of 18,000 horsepower for each of the three existing units. Construction work started towards the end of last winter. Very special care is required in excavation and blasting to avoid injury to the existing operating units. Due to difficulties common to all construction work at the present time certain delays are being experienced, however, fair progress is being made and it is expected that the new unit will go into operation about June of next year.

#### **Rural Service**

Those of you who attended the general O.M.E.A. Convention in Toronto in February last, will recall that I referred to the comprehensive revision made by the Commission, after consultation and with the consent of the Provincial Government, in connection with Hydro rural service. The revised set-up for rural service was put into effect in January 1944. It amalgamates into one rural power district all areas formerly supplied by 120 rural power districts. It goes, however, a step further than this because it establishes for all districts a uniform rate structure with a common rate applicable to each class of rural service. Thus no matter where rural service is given in Ontario by the Hydro, the rural consumer for the same class of service and the same consumption of electricity will pay the same amount on his quarterly bill.

For farm service the service charge is abolished and for hamlet residential service is cut in half.

This rural amalgamation and unification of rates is possible only because of the financial assistance given by the Province as part of its aid to agriculture. The new set-up is a means of apportioning the benefits from provincial grants where they will do most good; namely, to the farmer in sparsely settled or less fertile farming districts where, because of these conditions, electrical service is necessarily more costly to provide. It is recognized, however, that far too many Ontario farmers use too few kilowatt-hours. The low uniform rural rates now in effect afford a challenging opportunity to the farmer himself to make more and better use of Hydro service as nothing he can buy will give him such a return on his investment.

The Thunder Bay rural power district has of course benefitted by the relaxation of restrictions imposed by the Dominion Metals Controller on rural extensions. Since March 1943 more than 80 additional services have been connected, and further rural extensions will be made in the Thunder Bay district and also in the Rainy River district when materials and labour are released to us. We look forward after the war to a time not far distant when Hydro service will be as universal throughout rural Ontario as it is in the cities and towns.

#### **Progress at Steep Rock Iron Mines**

You will recall that last year I outlined to you the various steps which had to be taken in order to develop the rich iron ore bodies in Steep Rock lake. These steps included the diversion through Finlayson lake of the inflow to the upper portion of Steep Rock Lake, the sealing off and pumping out of the upper-portion of Steep Rock Lake and many incidental construction operations of considerable magnitude.

To provide power for these operations and for replacing the power developed at a 10,000 horsepower plant situated at the inlet to Steep Rock lake, the Commission completed in November of last year a high-voltage transmission line 125 miles long from Bear Point transformer station near Port Arthur to the Moose lake power plant in the neighborhood of the mine. Notwithstanding many difficulties encountered this transmission line was completed on time and the big job of pumping out the lake began, the first of the ore bodies was uncovered and the production of ore commenced in the latter part of August. Ore shipments, it is expected, will be made very soon. The estimated load of 6,000 horsepower for preliminary and pumping operations plus 10,000 horsepower for replacement power in connection with the Moose lake plant has been somewhat exceeded and the Commission has been supplying between 17,000 and 18,000 horsepower over the new transmission line.

I might point out that this Steep Rock load is a valuable asset to the Thunder Bay system in that it is revenue producing without entailing any additional liability. The liability, as in other mining loads, is carried by Northern Ontario Properties which are owned by the Government and operated by the Commission.

#### **Post-war Activities in the Thunder Bay Area**

With the end of the war in Europe now approaching



as we believe a victorious conclusion, the Commission's engineers are actively planning for the post-war period and, in common with many others, the Commission believes that one of the most fertile fields for the beneficial use of power after the war is that of mining. As you well know shortages of labour and materials diverted to the more vital sphere of war production have greatly handicapped the mining areas of northern Ontario during the past two or three years. In the Patricia district of northern Ontario, for example, between 1941 and 1943, there was a reduction of some 45 per cent in the load supplied from the two generating stations of Ear Falls and Rat Rapids. Similarly, in the mining areas served by the Thunder Bay system in the vicinity of Beardmore and Geraldton, substantial reductions in operations have taken place since 1941 and the gold mining load served in this area has fallen from 12,900 to 7,400 horsepower or more than 40 per cent with seven out of eleven mines closed down.

These evidences of substantial recessions in the mining industry, and particularly in the gold mines of northern Ontario, the Commission believes, are symptomatic of war conditions and do not suggest any decline in opportunities for profitable mining operations under normal conditions. Indeed the Commission believes that the cessation of hostilities will turn the thoughts of many to the opportunities to be found in northern Ontario and that there will be a great revival of interest and activity both among the established mines and in many areas where preliminary investigations have been encouraging.

In the great depression of the early thirties the mines of northern Ontario were a great source of strength to the whole Province. It may well be that in the rehabilitation period to follow this war the mining and associated fields will be a basic foundation of great value providing for many of our returned men a career in civil life not entirely devoid of the element of adventure to which their war years have accustomed them.

Apart from the proved existence of zones of payable ore no factor has been more important to the success of northern Ontario mine fields than the provision of ample supplies of low-cost electric power. While there are in northern Ontario many mines so rich that the cost of power is not a deciding factor, there are many more whose economic working is only possible because ample low-cost power permits the handling of large volumes of low grade ore.

As a contribution to the expected comeback of the mining industry after the war the Commission has, with the approval of the Government, authorized a substantial reduction in the cost of power in northern Ontario including the areas served from the Thunder Bay system. The new rate will become effective in January 1945. Under the new rate gold mines in all districts will pay \$27.50 per horsepower per annum for the first block up to 5,000 horsepower. The existing rate for mines served by the Abitibi Canyon development is \$32.50 per horsepower per annum and for all mines served in the Thunder Bay and Patricia districts it is \$35.00 per horsepower per annum for the first block up to 5,000 horsepower. The reduction, therefore, in the area served by the Nipigon river plants is \$7.50 per horsepower per annum, a quite substantial one.

There is always an element of risk in serving mines,

particularly gold mines, and it is for that reason that the Government undertook in 1930 to finance the System known today as Northern Ontario Properties which serves the mines and mining townsites.

Because of this element of risk the Commission has kept the section of line serving the mining areas between Nipigon power plants and Longlac separate in order that these accounts should not be a liability for the Thunder Bay system. The added risk involved by now decreasing the power rate by \$7.50 per horsepower, when the load is about half of its pre-war size, and the resulting loss in revenue will, therefore, not affect the financial stability of the Thunder Bay system, since the Government, through the Northern Ontario Properties, guarantees to make good any loss. Similar to the Steep Rock load, the Thunder Bay system, therefore, will continue to furnish the power for the load, but is relieved of any liability. Of course the Thunder Bay system is very beneficially affected because the revenue from this base load helps in carrying the fixed and operating charges of the system.

### Future Power Supplies

Now a few words regarding future power supplies. The fourth unit at the Alexander station of 20,000 horsepower now being installed will give to the Thunder Bay system ample additional capacity to take care of your present and immediate future needs. You also have at undeveloped sites on the Nipigon river power reserves for many years to come. The total power developed at Cameron Falls and Alexander, with the fourth unit at Alexander installed, will be about 145,000 horsepower but, due to the addition of Ogoki water, the Nipigon river capacity can easily be doubled when necessary by constructing new plants at Victoria Rapids and Pine Portage.

There are also a number of additional sources of power within reasonable proximity to the head of the lakes, which are available to supplement the potentiality of the undeveloped sites on the Nipigon river.

The Commission is, at the present time, making investigations of the power site on the Aguasabon river, close to its outlet into Lake Superior. The Long Lake diversion project, which came into operation some years ago, diverts southerly into Lake Superior a portion of the flow of the Kenogami river, which formerly flowed into the Albany and thence into James Bay. This diverted water now flows down the Aguasabon river, augmenting the flow of that river and making the natural power site at its mouth of much greater value. Preliminary estimates indicate that a plant of 20,000 horsepower may be economically constructed at this point.

Farther east, but still within reasonable transmission distance, there are two sites on the White river having an aggregate capacity of about 16,000 horsepower, and an additional 5,000 horsepower is available on the Pic river. To the west at Silver Falls on the Kaministiquia river, an attractive site of from 25,000 to 30,000 horsepower can readily be developed.

You can, therefore, rest assured that the Commission will be ready and well prepared to develop additional power resources for the Thunder Bay system whenever and wherever new power requirements are needed.









AT THE left are three of the Barrie utilities' linemen standing in front of the substation. Inset is W. M. Salter, general manager and secretary, and the lower picture shows a section of the office, and members of the staff at work.



(LOWER LEFT) This picture was taken at the First Co-operative Packers' plant, and shows bologna meat coming out of the electrically-operated cutter. At the lower right is the Barrie Collegiate Institute, which celebrated its centenary last year.





# URGE ACTION IN STANDARDIZATION OF SWITCHES ON ELECTRIC RANGES

**Windsor Delegates to District No. 6 Meeting Claim Manufacturers are  
Opposed—Seek Co-operation of Hydro Municipalities  
and Commission**

**C**LAIMING that certain manufacturers were opposing all efforts to standardize electric range switches, commissioner Garnet A. Edwards of the Windsor Utilities Commission, and Fred Rhoads, merchandising manager of the Hydro Division, Windsor, urged all Hydro municipalities and the H.E.P.C. to give their support in getting action.

The subject was brought up at the annual meeting of District No. 6, O.M.E.A. at Stratford on September 27 when W. Ross Strike, president of the O.M.E.A., and H.E.P.C. commissioner, gave the delegates the assurance that "So far as the executive of the O.M.E.A. are concerned, and so far as I am able to represent the municipalities on the Commission, this matter of switches on ranges will get our attention."

Circumstances arose which necessitated changing the venue of this meeting from Guelph to Stratford where the business session was held at the City Hall and a luncheon meeting at the Y.M.C.A. Addresses were delivered by W. Ross Strike, R. T. Jeffery, chief municipal engineer, H.E.P.C., and Wills MacLachlan, head of the H.E.P.C. employees relations department, while F. H. May, president of District No. 6, presided.

At both the morning and luncheon sessions the question of electric range switch standardization loomed large in the proceedings. Mr. Edwards reviewed the work which had been done, and recalled that a joint committee of the O.M.E.A. and A.M.E.U. had met in Toronto on November 6, 1942, when W. P. Dobson and Col W. R. McCaffrey of the Canadian Engineering Standards Association (now the Canadian Standards Association) had been present. On December 9, 1942, the announcement was made that authority had been granted for the organization of an appropriate C.S.A. committee to "develop a standard switch".

Mr. Edwards told the District No. 6 delegates that a standard switch design had been prepared but that certain manufacturers opposed standardization. "We need public opinion behind us," he declared. "It has come to the point where it is going to be a battle to get range and switch manufacturers to standardize switches."

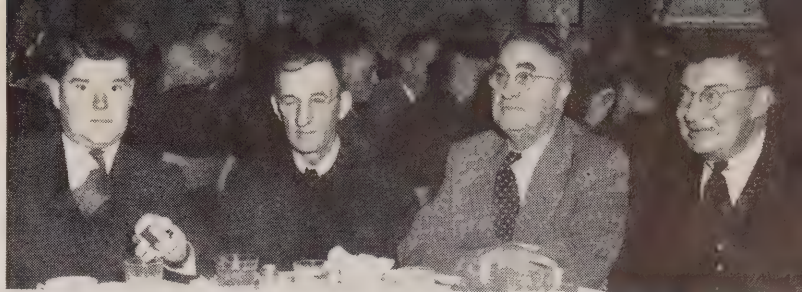
Mr. Rhoads expressed gratification that Mr. Strike had stated that the matter would receive attention. "I think," he said, "if the manufacturers of ranges had paid attention when we started on the question some years ago, they would have corrected their mistakes. Each and every range has a separate switch of its own, and it's not possible to

PHOTOGRAPHIC IMPRESSIONS of District No. 6 O.M.E.A. annual meeting at Stratford are reproduced on this page. The two upper shots were taken at the business session, while the lower shows the head table group at the luncheon. Officers of District No. 6, who were re-elected for the ensuing year, are shown in the lower right illustration. They are: front row, left to right: F. E. Walker, vice-president; F. H. May, president; and W. P. Kress, director. Back row: George Eiffert and G. W. Gordon, directors.





HERE ARE more pictures taken at District No. 6 meeting. Top right shows, from left to right: Mayor D. C. White, St. Marys; A. M. Bowman, superintendent, Elmira Public Utilities Commission; W. E. Swartz, manager, Preston Water and Light Commission; and Mayor W. Pelz of Preston. Bottom right pictures show a war services' draw.



get them. Just try to get switches today. It's next to impossible. A large percentage of range switches are made in the United States and merely assembled here."

Continuing, Mr. Rhoads declared: "We cannot get the range manufacturers together. We go on asking, and we are getting nowhere. Some of the larger manufacturers were opposed to switch standardization from the outset. They own American plants and import their switches."

The speaker pointed out that at the Hydro Shop at Windsor they had 17 different types of switches on 7 ranges and not one was interchangeable with another. Apart from the difficulty in obtaining switches with which to make repairs, Mr. Rhoads drew attention to the high cost of some of these switches and emphasized the economy as well as the convenience of having a standard switch.

"Quantity production of switches will make for lower costs," stated Mr. Rhoads. "One die can be used to punch out ten thousand switches."

Many people, he contended, could not enjoy the advantages of electric cooking because the prices of ranges were "overhigh" and because of the high cost of replacing parts. He appealed for the co-operation of all Hydro municipalities and the Commission in getting action on the switch standardization question, and reminded the delegates that "a lot of energy" would be available for the operation of electric ranges.

All officers of District No. 6, O.M.E.A. were re-elected for the ensuing year. They are as follows: president, F. H. May; vice-president, F. E. Welker; directors, W. P. Kress, George Eiffert and G. W. Gordon; secretary-treasurer, William McKee.




A. BRUBACHER, commissioner (left), and A. Winger, chairman, of the Elmira Public Utilities Commission, are shown above.





# HARNESSING HORSEPOWER



**T**HIS is the first in a series of articles which will outline, step-by-step, the work involved in the building of a power plant from the time a site is selected until the electricity is available in homes and factories that may be located hundreds of miles away.—The Editor.

**I**N his onward march to ever-widening horizons of human attainment, man has enlisted the aid of the forces of Nature in accomplishing some of his greatest triumphs in the realms of science and engineering.

Down through the centuries these forces have literally laid the foundation upon which have been erected enduring monuments to man's vision and ingenuity. This is particularly true of the way in which water power has been harnessed to generate electricity. It will be recalled that many interesting facts, set forth in the article "Lowly Pioneers," published in July issue of Hydro News, showed how shellfish, sponges and other organisms, along with the spread and retreat of glaciers during the Pleistocene period, had contributed to the formation of rocks, water levels and falls which exist today.

All these and many other facts, such as precipitation records, are of primary importance to the engineers who are charged with the responsibility of determining the most suitable site at which water may be used to the greatest possible advantage in the generation of electricity.

The work of these highly skilled engineers is perhaps one of the most romantic sagas of man's ingenuity in enlisting the co-operation of Nature. It's a story of thrilling achievement, showing how the driving force of great rivers and cascading falls has been harnessed to completely revolutionize the entire pattern of life and living in home and factory and on the farm.

To the people of Ontario, the many benefits of low-cost Hydro power are synonymous with a modern way of life which has followed transmission lines throughout the province. It has, in a sense, become second nature to flip a switch, not only for light and heat, but to set in motion great wheels of industry and to drive the many types of labour-saving and time-saving appliances.

## Co-operate As A Team

Few, perhaps, have thought of the very literal connection between the little switch and a great waterfall which may be hundreds of miles away. It is the work of a fraction of a second to get electricity at the touch of a switch, but it may have taken two or three years, plus the knowledge of records dating back fifty or even a hundred years, to build the power plant where that electricity is generated.

It's a long story and an interesting one—too long and too interesting to crowd into one or two articles. Therefore, in order that it might be told in some detail, Hydro News enlisted the co-operation of Commission engineers who are responsible for the planning and building of great Hydro power plants.

In the same way as their respective departments co-operate as a team in planning and constructing a develop-

(Continued on page 21)



# CANADIAN WAGE EARNERS ASKED TO DO BIGGER JOB THAN EVER

Addressing Personnel Publication Editors, Minister of Finance Announces  
\$1,300,000,000 Objective For Seventh Victory Loan

**B**ECAUSE the need is greater than ever, Canadian wage earners are being called upon to do a bigger job than they have ever done before in investing money in Victory Bonds when Canada's Seventh Victory Loan is launched on October 23 to realize an objective of thirteen hundred million dollars.

These facts were emphasized by Hon. J. L. Ilsley, Canada's Minister of Finance, who was the speaker at the Fourth Forum For Victory, sponsored by the Canadian Association of Personnel Publication Editors in the Royal York Hotel on September 25. His remarks on this particular occasion were specially directed to editors of company, plant and institutional publications such as Hydro News.

"The tremendous success of these loans," stated Mr. Ilsley, "has been possible because public opinion has been thoroughly mobilized behind them."

He pointed out that the payroll savings plan had been the most vital part of these campaigns and he paid tribute to role played by personnel publications in helping raise payroll savings sales from \$31 million in the Second Victory Loan to \$195 million in the Sixth.

"We need your help now, more than ever, and I am here to ask for it," said the Minister of Finance as he stressed the fact that the objective was higher and could not be accomplished without great effort.

"We cannot regard it as the end when the Germans have been chased into their own hills, when our troops have reached Berlin," Mr. Ilsley warned. "We shall continue to

require large sums of money for the Japanese stage of the war. We shall need war production on a large scale, not as great as the present scale, of course, but still great by comparison with anything we knew until two or three years ago. We must not slacken our efforts because we must get this second stage over with as soon as possible. Continued war expenditure and further Victory Loans will be rendered necessary by our participation, to which we are committed, in the Japanese war."

A dramatic highlight of the Forum proceedings was an address by George Fletcher, past president of CAPPE, who read a letter from a Medical Corps captain who is stationed in England. In a simple but gripping style, this surgeon told of his experiences. "I wish," he wrote, "I could paint the picture I saw the other day in the admitting department when an evacuation started. There were row on row of stretchers as far back as you could see clearly—those on one side going out, the others coming in, covered with grey blankets . . . What I have just seen, while commonplace to me now, would be something to make your heart ache if you watched it for the first time . . . When there are no buzz-bombs and I can snatch a few minutes' sleep these nights, I'm afraid I may lose one of the boys before I wake up . . . And sometimes I wonder what most of the people back home have done today, that here, far away, one of these fine boys should die for them tonight."

After reading these extracts from the letter, Mr. Fletcher remarked: "Surely, our duty on the home front is clear."

**COMPULSORY SAVINGS TAX REMOVED**

**THREE CHEERS! THERE'LL BE MORE MONEY IN OUR PAY ENVELOPES TO SPEND EACH WEEK.**

**BUT—WHY SPEND IT NOW? UNNECESSARY SPENDING INVITES INFLATION AND HARDSHIP FOR ALL OF US.**

**SAVE YOUR EXTRA MONEY FOR THE NEXT VICTORY LOAN**

**BE SMART. BUILD A NEST EGG FOR A RAINY DAY...AND BUY THE WEAPONS OUR BOYS NEED TO BRING VICTORY.**

INCOME TAX . . . . .	\$162.00
(MARIED, 1 Dep.)	
COMPULSORY SAVINGS	\$162.00
TOTAL TAX . . . . .	\$324.00
Now You Pay Only . . .	\$162.00
	ANNUALLY



# ANNUAL FALL FAIR



UPPER LEFT: A. J. O'Connor and Velma Dawson look over the home canning and preserving. Upper right: the flower section was well represented, Irene Bolton, Mabel Joyce, Rita Walsh and Audrey Hitchman are the interested onlookers. Lower right: some prize vegetable exhibits are viewed by, left to right, Helen O'Brien, Mary Snailham, Janice Stevenson, Isabel Helme and Betty Barnett.

**V**ARIETY was the keynote of this year's Fall Fair, sponsored by the H.E.P.C. Horticultural Club, of which A. B. Hayman is president.

Reproduced on this page are camera impressions of the show, which was held in the auditorium of the Administration Building, and which was divided into three sections: vegetable, flowers and home canning.

During the present season 478 Hydro victory gardeners, made up of 291 in the Toronto area and 187 in the field, went into action in gardens and on allocated plots.

Some of the entries on view came from as far away as Abitibi Canyon, Larder Lake and Kirkland Lake. While many fine exhibits were on display, members of the committee expressed disappointment that more victory gardeners did not take the opportunity to enter this event. However,

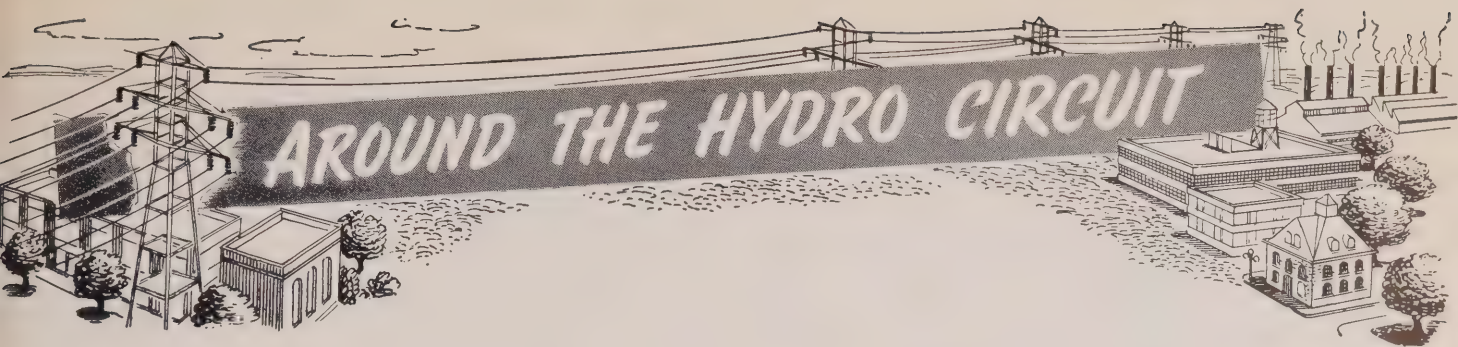
what was lacking in quantity was offset by quality. Prize winners are as follows:

**Vegetable section**—R. Boustead, seven "firsts" and two "seconds," also sweepstake prize; A. Matheson, two "firsts" and one "second," also runner-up for sweepstake prize; J. F. MacLaren, one "first" and two "seconds"; J. M. Murphy, one "first" and two "seconds"; H. E. Brandon, one "first" and one "second"; S. Appleton, one "first" and one "second"; Osborne Mitchell, one "first" and one "second"; H. L. Wagner, one "first"; G. A. Honsberger, one "first," also "best" vegetable exhibit; Adam Smith, Mrs. Dorothy Newham, P. T. Seibert, Jack Thompson and J. F. Perkins, one "second" each.

**Flower section**—Osborne Mitchell, five "firsts" and one "second," also sweepstake winner; H. L. Wagner, four

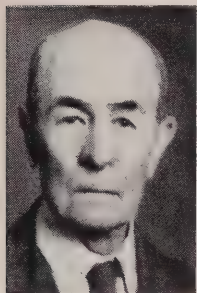
*(Continued on page 22)*





## COMMISSIONER DOUGALL

**JAMES BACON DOUGALL**, commissioner of Barrie Public Utilities Commission, and probably the oldest on any Commission in the Province, has served for nineteen years, and during that time was chairman for ten years. He was also alderman for one year.



He was born in Barrie in 1858, and attended school there.

Mr. Dougall is a retired furniture manufacturer, and now has time to indulge in his favourite sports of motor boating and fishing.

His forebears have long been associated with the district, his father having come to Barrie from Scotland more than 100 years ago.

## MEET THE MAYOR

**DONALD FORSYTH MacLAREN** has been mayor of Barrie for the past three years. Prior to this he was alderman for three years; deputy reeve for two years, and reeve, three years.



Mr. MacLaren was born at Barrie in 1899, and received his early education there. Later he came to the University of Toronto and received his Bachelor of Arts degree in 1922, and in 1925 he graduated from Osgoode Hall as a Barrister-at-Law.

While at school he took an active interest in sports of all kinds, and now his hobbies are fishing and gardening.

Mr. MacLaren's education was interrupted by the advent of the First World War, in which he became a lieutenant in the Royal Canadian Artillery. He is at the present time a major in the second battalion (Reserve) of the Grey and Simcoe Foresters.

## BARRIE GENERAL MANAGER

Energetic and genial **WILLIAM MILLET SALTER** has been general manager and secretary-treasurer of the Barrie Public Utilities Commission for the past nine years. Mr. Salter was born and educated in Chatham, New Brunswick. Although he is very active in municipal affairs, he finds time to get in a little fishing and gardening.

## BARRIE'S CHAIRMAN

**JOHN FRANKLIN CRAIG**, chairman of the Barrie Public Utilities Commission, was born and educated in Goderich, Ontario.

Mr. Craig has been a member of the utilities for fourteen years, acting as mayor for nine years; commissioner two years and chairman for three years. In 1911 he was elected deputy reeve, and reeve in 1919-20. He has also served on the Hospital Board; Parks Commission; Board of Health; Library Board, and has been actively engaged in many other municipal affairs.



Mr. Craig has been in the clothing and men's furnishings business for the past 45 years, and is past president of the Men's Clothing and Furnishings section of the Retail Merchants Association of Ontario. He is also interested in several fraternal organizations and church work, and his hobbies are golf, horses and dogs.

## PLAN MEETING AT LONDON

A meeting of the Accounting and Office Administration Committee, A.M.E.U., will be held in London on Thursday, October 19, 1944, at Hotel London. W. E. Wallace, office manager of the Windsor Utilities Commission, Hydro Division, who is chairman of the Western Section of the Standing Committee, will preside.

## KILLED IN ACTION

**P/O JOHN RUSSELL POUND**, R.C.A.F., formerly of the H.E.P.C. electrical engineering department, is reported killed in action. P/O Pound entered the Commission's service as a learner draftsman in the planning section of the electrical engineering department in December, 1939, and continued in this capacity until his enlistment in August, 1942.

Corporal **NICHOLAS BUDNICK**, R.C.O.C., formerly of the H.E.P.C. operating department, has been reported killed in action while on duty in France. Cpl. Budnick entered the Commission's service as a fitter's helper in the Eugenia district in March, 1942, where he remained until his enlistment in January, 1943.





**T**HANKSGIVING DINNER: One part of the Thanksgiving dinner menu could be given more emphasis and more variety these days. We refer to the vegetables served with the traditional roast turkey, or chicken. We maintain that the festive bird is worthy of more interesting companion dishes than plain mashed potatoes and boiled onions or boiled carrots. The particular vegetables you serve will depend on the tastes of your guests, but try to have both a yellow and a green vegetable. Golden brown potatoes, glazed sweet potatoes, diced turnip and green beans, baked acorn squash, filled with creamed small onions, boiled celery and steamed broccoli with cheese melted on it, mashed pumpkin with a dash of mace, scoops of vegetable marrow with a parsley-egg sauce, canned peas and florets of cauliflower, corn fritters, egg plant soufflé, harvard beets, fried green tomatoes, are suggestions for this special occasion.

With dishes of tasty vegetables, a sugar-saving dessert of diced fruits sweetened with left-over fruit juices, and a mincemeat cookie may complete an appetizing meal.

\* \* \*

**HAVE YOU** ever cut raw turnip in thin strips and served them as a crisp appetizer just as you would celery curls or carrot slivers?

Grated raw, yellow turnip is delicious in a vegetable salad. Combine it with chopped celery and serve on shredded lettuce, then moisten with some juice of the grated turnip, squeezed in a cheesecloth.

When it comes to cooking turnips, cut them in small pieces, use just enough water to barely cover them, add salt, and cook until tender. Drain the turnips well before mashing or adding a white sauce.

Because the yellow turnip has a pronounced flavour, we like the idea of mashing it, and combining it with an equal amount of mashed potato.

Cubed, cooked turnips, white sauce (made with part turnip liquid and milk) and cooked pork sausages (browned and mixed with fried green tomatoes) make a delicious dish.

Then, too, the flavour of turnips is delicious in soups, stews and similar dishes.

\* \* \*

**HERB THEMES:** With a few herbs, the simple, homely dishes become miracles of culinary art. The secret lies in the recipe-maker's artistry and inventive genius, in the flavourful blending of ingredients, and in cooking them to a turn (herbs lose their aroma if cooked too long at too high temperature). An elusive suggestion of garlic or chives in the salad or meat loaf, and the delicate flavour of chopped

parsley in the cole slaw appeal to many palates. A pinch of powdered herbs and a hint of onion in the squash, and a dash of curry in powdered eggs will add zest to these dishes, while sizzling hot lamb chops like a dash of vinegar with dried mint. All bread stuffings are "encouraged" by sage, thyme or summer savoury in dressing for fish, fowl or meats. Getting the right flavour is the art of adding herbs—enough but not too much.

\* \* \*

**ONE OF** the tastiest apple dishes is one in which tart flavoured apples are peeled, cored, and quartered, then put in layers in a bean crock, or glass casserole, each layer having a sprinkling of sugar, some cinnamon and nutmeg. If you prefer, a dash of lemon juice may be added instead of spices. When the dish is filled, add three quarters of a cup of cider and bake with a cover on for one-half hour in an electric oven, at 275 degrees.

Apple sauce, too, is something different when jellied and served with soft custard or cream. The method is to put apple sauce through a sieve, sweeten, and make a jelly, using one tablespoonful of gelatine soaked in  $\frac{1}{4}$  cup of cold water to 2 cups of apple sauce. Add a dash of lemon juice. Chill, and when beginning to set, add  $\frac{1}{4}$  cup of plump raisins, or nuts if obtainable. Pour into wet moulds and chill in electric refrigerator. Turn out on colourful plates. Serve with prune juice.

\* \* \*

**MEAT CAKES,** made from good quality ground beef and sauteed or broiled until brown are popular in many homes. They will look very attractive if a depression is made in the centre of each cake before cooking, and after, fill with bright red chili sauce. If you have buttered cabbage and scalloped potatoes with this entree you may top the meal with an upside-down peach gingerbread — it's a special dessert for the fall season. Serve with cream.

\* \* \*

**HALLOWE'EN PARTY LUNCH:** 'Burger sandwiches are ideal for folk who have been out in the brisk night air. Soft or crusty rolls are used for these, but tea biscuits or crumpets are also good. Split them and tuck in lots of filling. Serve wrapped in a paper serviette. Here are a few suggestions for fillings: minced cooked meat or any prepared meat paste, shredded vegetable salad, drained green relish, fish cakes, chopped raw cucumber, grated cheese with a little mustard in it, cream cheese with orange colouring, minced egg with chili sauce, sausage cakes and onion rings, fried green onions and minced liver, scrambled eggs with canned corn and minced green pepper.

If it's convenient for the folks to toast the rolls themselves and fill them from a selection of two or three fillings, they will "hoot" for your successful lunch.

\* \* \*

**HOW DO** you measure flour? All flour, except whole wheat, should be sifted once before measuring. Fill gently with a spoon. Don't shake down.

Sugar: Brown sugar should be lightly packed in the measuring cup.

Fat: When melted fat is required, melt on electric element turned to "low" before measuring.





LESS than 200 years ago itinerant preachers were a common sight in Cornwall and Wales. Making their way on horseback, or on foot, visiting isolated farms and villages, they would call together all who could be reached. Meeting with groups in private homes or in the inn parlour, these preachers would read the scriptures and all would join in hymn singing.

An artist's impression of one of these religious gatherings is shown in the accompanying illustration. Illumination, it will be noted, was provided by what was known as "Rush Lights" made from split rushes dipped in tallow.

In these days, primitive forms of lighting were not confined to Cornwall and Wales. The folks in Ontario, at that time, lacked the many benefits of low-cost Hydro power, and there were no long-life Hydro lamps to lighten their way.

## ANNUAL GOLF FIELD DAY

ALTHOUGH the "rains came" at the annual H.E.P.C. golf field day, it evidently did not dampen the ardour of the participating players. However, the shower, no doubt, was responsible for many of the scores being higher than they otherwise would have been, at least that is the story given to Hydro News.

This year the event was held at the Weston Golf and Country Club and was attended by 73 players. The evening dinner was presided over by president G. A. Honsberger.

The Dr. Hogg trophy, which is the main event on field day, was won by Harry Hustler with a net score of 69. In the absence of Dr. T. H. Hogg, H.E.P.C. chairman, the cup was presented to the winner by A. B. Cooper, president of the Ferranti Electric Company, who is generally recognized as "Father of the Hydro field day," having been largely instrumental in inaugurating this annual event.

Other prize winners were: H. R. Morris, J. F. Scace, W. C. Cunningham, N. A. Falkner, H. J. Ayris, A. H. Frampton and W. Ross Strike, commissioner.

The following trophies were played for during the year and were won by: Gaby cup—W. C. Cunningham, runner-up, H. J. Ayris; Littlejohn cup—N. A. Falkner, runner-up, Gordon Swalm; McGrath cup—W. R. Harmer, runner-up, P. G. Weir.

The following officers were elected for the coming year: past president, G. A. Honsberger; president, G. T. Thomson; vice-president, W. R. Harmer; secretary, W. C. Cunningham; treasurer, P. G. Weir; committee, D. T. Flannery, B. C. Platt and A. E. Kobold.

## HARNESSING HORSEPOWER

(Continued from page 16)

ment, these engineers have agreed to work as a team in the preparation of a series of articles bearing the title "Harnessing Horsepower."

In this, the first article in the step-by-step story, attention is directed in a broad, general way to the ground which will be covered in the articles to follow.

In simple language, hydraulic, electrical and construction engineers will endeavour to give Hydro News readers an impression of exactly what happens when the Commission decides that a new plant is required to meet increasing demands for Hydro power in a certain area.

They will explain how a suitable site is selected and why rainfall and river flow records over a period of possibly a hundred years are important in making that selection.

### Combined Operations

Surveys, costs and physical geography will also be discussed, and as the story unfolds, it will be shown that it takes more than a suitable power site, blueprints, tools, electrical equipment and the combined efforts of engineers and construction men to build a power plant. There are, for instance, such problems as housing, feeding and providing comforts and conveniences for the men on the job. It will be explained how all this is done by an efficient, smooth-working organization which, almost overnight, can establish a comfortable, homelike community even in the most remote areas of the province.

In brief, these articles on "Harnessing Horsepower" will tell a graphic story of combined operations on the part of the men who serve Ontario's great public ownership enterprise and the people of this province.



## S. R. A. CLEMENT DIES SUDDENLY

STEPHEN R. A. CLEMENT, aged 63, assistant engineer in the municipal department, cost accounting section, died suddenly at his home on September 14, following a heart attack. He had been with The Hydro-Electric Power Commission of Ontario for the past 35 years.



Widely known throughout the province, Mr. Clement was secretary of the Association of Municipal Electrical Utilities from the earliest days of that organization in 1909 when it was known as the Engineers Section of the O.M.E.A. He was also editor of the former Hydro Bulletin.

Born on a farm in the township of Innisfil, Simcoe County, he attended "the little red school house" in the section and completed his education at Barrie Collegiate and S.P.S., Toronto, graduating in electrical engineering in 1905. Before becoming identified with the Commission, Mr. Clement held positions with the T. and N.O. Railway Commission and with General Electric in Schenectady, N.Y.

Surviving are his widow, two sons, Lt. Lewis David Clement, R.C.N.V.R., and L.A.C. Francis Houghton Clement, R.C.A.F., a sister, Mrs. Fred Rogerson, Dodglin, Sask., and one brother, Francis Clement, K.C., of Thessalon.

## EXPRESSION OF GOODWILL

Retirement of JOHN G. GLASSCO, manager of the Winnipeg Hydro-Electric System, on September 15, after many years of public service, has brought expressions of the esteem in which he is held by his many colleagues, friends and well-wishers.



Dr. T. H. Hogg, chairman of The Hydro-Electric Power Commission of Ontario paid tribute to Mr. Glassco's leadership in a letter which stated: "The Hydro-Electric Power Commission of Ontario asks you to accept this expression of esteem and goodwill to you personally, and to the Winnipeg Hydro-Electric System sends its cordial good wishes for continued success in the future."

Mr. Glassco, Hydro News was informed, will be succeeded by J. W. Sanger, who has been chief engineer of the Winnipeg Hydro for the past 22 years.

## JAMES SWANSON RETIRES

JAMES SWANSON, superintendent of the electric and water departments of the Stratford Public Utilities Commission for the past twenty years, retired from active duty a short time ago. Mr. Swanson had been associated with the utilities commission since its inception in 1910, and virtually grew up with the system.

## FORMER HYDRO EMPLOYEE AIDS BOMBER COMMAND

CORPORAL JACK KRESSLER, R.C.A.F., formerly with the property department of the H.E.P.C., is now preparing secret maps, analyses of operations and the like. Experts study his drawings and use them to help decide how and where to bomb the Nazis, according to an exclusive release received by Hydro News from the R.C.A.F.

Jack joined the Commission as a draughtsman in August, 1938, and enlisted in the R.C.A.F. as a radio mechanic in April, 1942. Bomber Command considered his knowledge of draughtsmanship so valuable that they took him away from his highly technical job as radar mechanic and put him back to work at his civil occupation.

## LATE NEWS BRIEFS

ROY HARMER of the Commission staff has been named acting secretary of the Association of Municipal Electrical Utilities, succeeding the late S. R. A. Clement who died suddenly on September 14.

Friday, October 20, is the date set for the annual banquet of the Ontario Hydro Quarter-Century Club. The venue is the King Edward Hotel, Toronto.

Former H.E.P.C. employee Pte. A. P. LaROSE, who is reported to have been killed in action, joined the Commission staff in April, 1941, and at the time of his enlistment in the Prince of Wales Rangers, was an operator-in-training at the South Falls generating station.

F/O JOHN M. ROBERTSON, R.C.A.F., former H.E.P.C. employee, is reported missing while en route from Bombay to Iran. He joined the Commission's staff in July, 1938, as a tracer in the electrical engineering department, and enlisted in the R.C.A.F. in May, 1941.

## ANNUAL FALL FAIR

(Continued from page 18)

"firsts," also "best" flower exhibit and runner-up for sweepstake prize; C. Wyatt, three "firsts" and two "seconds"; Mabel Joyce, two "firsts"; W. H. Carr, two "firsts" and one "second"; J. F. MacLaren, one "first" and four "seconds"; J. E. Stark, one "first" and two "seconds"; A. Matheson and Tessa MacPherson, one "first" each; Mary Snailham and R. Boustead, two "seconds" each; R. H. Whatley, Edith Thomas, Jean Wilson and N. Shaw, one "second" each.

Canning section—R. Boustead, five "firsts," also sweepstake winner; P. T. Seibert, one "first" and one "second," also runner-up for sweepstake prize; Jack Thompson and R. H. Whatley, one "first" each; N. Shaw, three "seconds."

Another feature of the fair was a lucky number draw, which realized approximately \$45 for the "Seeds For Britain Fund."



## TO BARRIE

(Continued from page 12)

domestic, 413 commercial and 51 industrial users. Prior to Hydro's inception, the average domestic rate was 9 cents per kilowatt-hour. This rate has steadily decreased until now it is 1.20 cents per kilowatt-hour.

### Fine Economic Position

Another indication of Barrie's progressive spirit was the electric range campaign that was launched in 1939, when 383 ranges were sold, which is believed to be an all Canadian record.

This town is in an enviable economic position, having only a comparatively small outstanding debenture balance, which will, in all probability, be paid by 1946.

As Simcoe County ranks as one of the finest agricultural districts in Ontario, Barrie is the center of extensive mixed farming activities, and is the headquarters of the First Co-operative Packers of Ontario, which is a well organized concern and has the distinction of being the first farmer co-operative packing plant in Canada. This company uses electricity for practically all its operations and has a total of 32 motors of varying capacities, ranging from 1 to 50 horsepower.

### Fine Homes and Buildings

Other leading companies include Clarke and Clarke Company, Limited; Barrie Flour Mills Limited; Barrie Tanning Limited; Canadian National Railways Roundhouse; Simcoe District Co-operative Services; Ball Planing Mill Company; Underhill's Limited, and others.

A town of many fine homes and buildings, Barrie takes justifiable pride in its Collegiate Institute, which celebrated its centenary last year. In 1843 the first Barrie Grammar School opened its doors. The name was later changed to Barrie High School, and still later to Collegiate Institute. In 1879 a new and larger building was opened. This school was enlarged and reconstructed several times, and in 1917 was practically gutted by fire. The present Collegiate Institute was built in 1919, and a few years later a new wing was added.

While this municipality has no direct war industries, its close proximity to Camp Borden, only fourteen miles away and one of Canada's largest military training centers, makes it a popular spot for the boys and girls in uniform.

Among its outstanding citizens is Leighton McCarthy, at present Canadian ambassador in Washington, Dr. W. E. Gallie, who is internationally known as a bone specialist; Reginald Godden, who has a continent wide reputation as a pianist; and Mrs. Harry Lay, sister of Mackenzie King, Prime Minister of Canada.

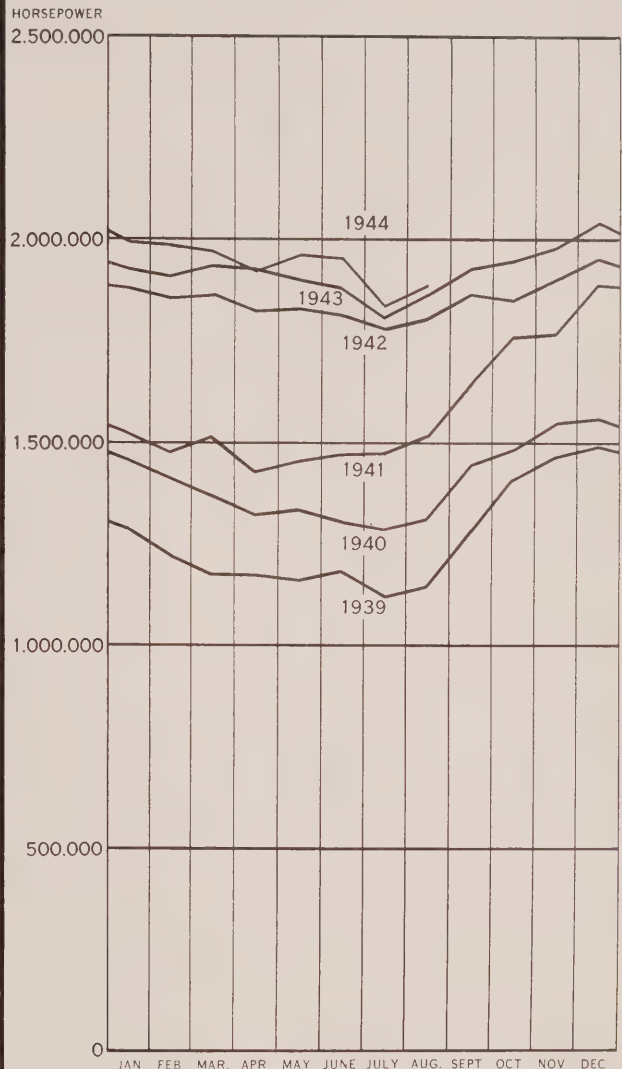
Although situated on the shores of a splendid body of fresh water, Barrie obtains its drinking water from artesian wells, and according to the citizens, it is of first rate quality, always refreshingly cool and requires no purification treatment.

Hydro, the great driving force behind this enterprising town, is ably administered by a progressive commission comprising J. F. Craig, chairman; J. B. Dougall and mayor D. F. MacLaren, commissioners.

## SOUTHERN ONTARIO SYSTEM

EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

### PRIMARY LOAD



### PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	AUGUST, 1944	AUGUST, 1943	
SOUTHERN ONTARIO SYSTEM...	1,894,338	1,865,748	+ 1.5
THUNDER BAY SYSTEM .....	95,979	100,214	- 4.2
NORTHERN ONTARIO PROPERTIES	<u>203,950</u>	<u>184,372</u>	+ 10.6
TOTAL .....	2,194,267	2,150,334	+ 2.0

### PRIMARY AND SECONDARY LOADS

SOUTHERN ONTARIO SYSTEM...	1,980,296	1,931,432	+ 2.5
THUNDER BAY SYSTEM .....	108,445	124,611	- 13.0
NORTHERN ONTARIO PROPERTIES	<u>259,178</u>	<u>232,495</u>	+ 11.5
TOTAL .....	2,347,919	2,288,538	+ 2.6



# MUNICIPAL LOADS, JULY, 1944

## SOUTHERN ONTARIO SYSTEM NIAGARA DIVISION

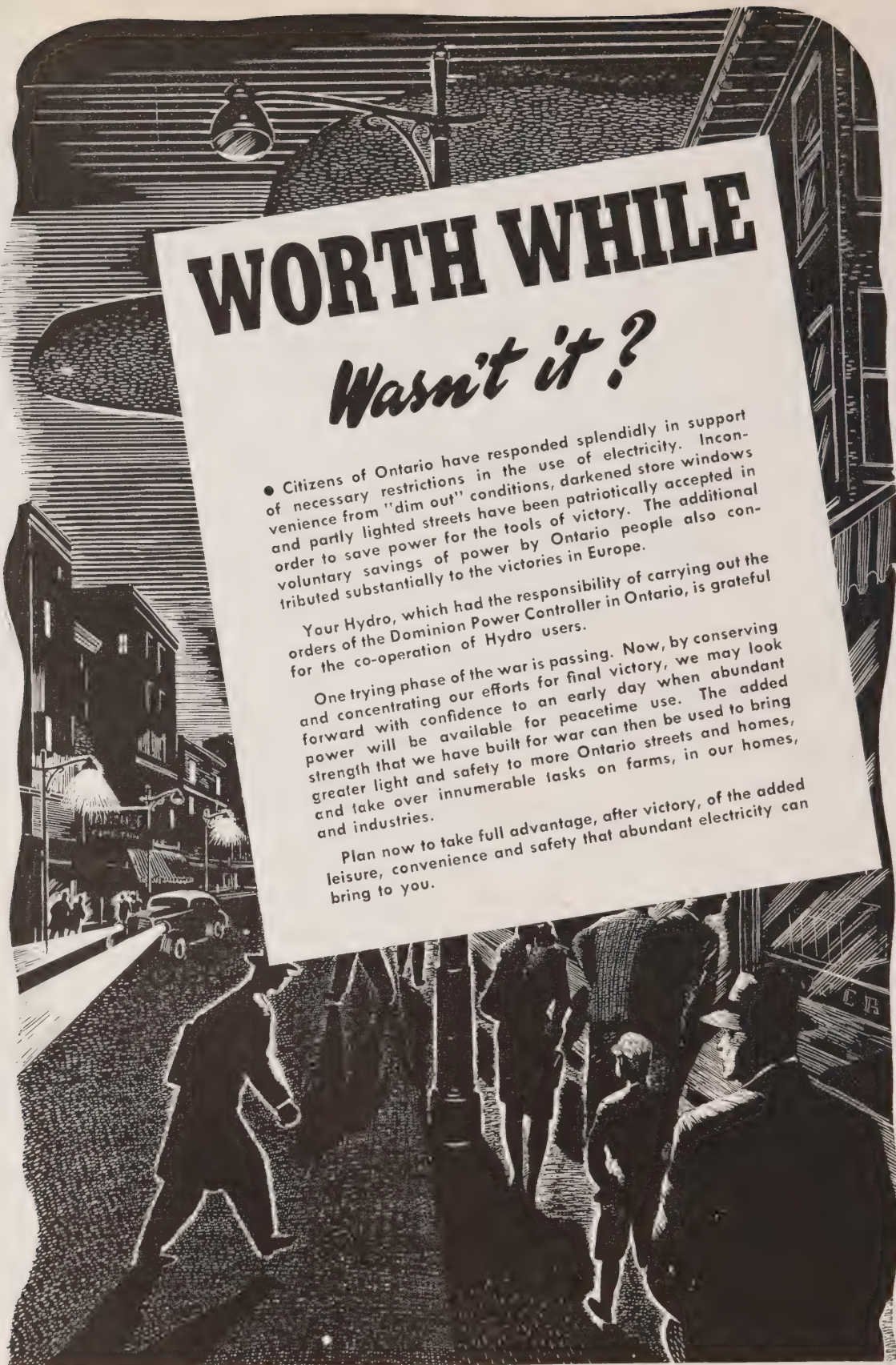
SOUTHERN ONTARIO SYSTEM			Popula- tion		Popula- tion			
NIAGARA DIVISION			H.P.		H.P.			
(25-Cycle)								
	H.P.	Popula- tion						
Acton	1,686	1,903	Erieau	233	281	Oil Springs	166	541
Agincourt	223	P.V.	Erie Beach	36	21	Otterville	122	P.V.
Ailsa Craig	150	487	Essex	493	1,886			
Alvinston	100	649	Etobicoke Twp.	6,831	V.A.	Palmerston	610	1,400
Amherstburg	975	2,704	Exeter	854	1,654	Paris	1,798	4,604
Ancaster Twp.	376	V.A.	Fergus	1,414	2,759	Parkhill	233	1,029
Arkona	72	403	Fonthill	168	860	Petrolia	908	2,768
Aurora	1,361	2,821	Forest	606	1,562	Plattsville	129	P.V.
Aylmer	762	1,985	Forest Hill	3,961	12,172	Point Edward	1,703	1,199
Ayr	299	760	Galt	10,215	15,126	Port Colborne	1,523	6,928
			Georgetown	1,841	2,452	Port Credit	857	1,934
Baden	518	P.V.	Glencoe	201	763	Port Dalhousie	1,203	1,599
Beachville	712	P.V.	Goderich	1,794	4,674	Port Dover	573	1,790
Beamsville	463	1,227	Granton	76	P.V.	Port Rowan	95	700
Belle River	202	836	Grimsby	910	1,988	Port Stanley	1,267	824
Blenheim	426	1,873	Guelph	10,726	23,074	Preston	4,084	6,656
Blyth	155	662	Hagersville	1,001	1,524	Princeton	153	P.V.
Bolton	264	629	Hamilton	144,287	164,719			
Bothwell	121	683	Harriston	529	1,292	Queenston	158	P.V.
Brampton	2,744	6,157	Harrow	548	1,092			
Brantford	20,863	31,622	Hensall	195	686	Richmond Hill	517	1,295
Brantford Twp.	1,107	V.A.	Hespeler	2,748	2,938	Ridgetown	512	1,986
Bridgeport	168	P.V.	Highgate	91	322	Riverside	1,004	5,235
Brigden	83	P.V.	Humberstone	562	2,831	Rockwood	151	P.V.
Brussels	156	784	Ingersoll	3,292	5,757	Rodney	128	758
Burford	276	P.V.	Jarvis	181	513			
Burgessville	57	P.V.	Kingsville	550	2,453	St. Catharines	26,309	34,541
Burlington	1,569	3,925	Kitchener	25,028	35,456	St. Clair Beach	126	138
Burlington Beach	468	1,474	Lambeth	107	P.V.	St. George	163	P.V.
			LaSalle	283	907	St. Jacobs	321	P.V.
Caledonia	298	1,430	Leamington	1,544	6,048	St. Marys	1,733	4,009
Campbellville	53	P.V.	Listowel	1,656	2,984	St. Thomas	7,154	17,045
Cayuga	99	700	London	36,069	77,105	Sarnia	10,244	18,599
Chatham	5,825	17,184	London Twp.	395	V.A.	Scarborough Twp.	4,367	V.A.
Chippawa	281	1,228	Long Branch	1,181	4,258	Seaforth	962	1,782
Clifford	107	491	Lucan	215	643	Simcoe	2,555	6,340
Clinton	730	1,879	Lynden	113	P.V.	Smithville	160	P.V.
Comber	126	P.V.	Markham	417	1,175	Springfield	63	382
Cottam	60	P.V.	Merlin	62	P.V.	Stamford Twp.	2,734	8,275
Courtright	45	355	Merritton	11,043	2,916	Stoney Creek	208	933
			Milton	1,437	1,915	Stouffville	358	1,198
Dashwood	124	P.V.	Milverton	416	994	Stratford	7,860	17,163
Delaware	75	P.V.	Mimico	2,320	8,354	Strathroy	1,583	2,834
Delhi	351	2,430	Mitchell	787	1,670	Streetsville	239	701
Dorchester	97	P.V.	Moorefield	46	P.V.	Sutton	560	949
Drayton	146	528	Mount Brydges	100	P.V.	Swansea	2,216	6,907
Dresden	404	1,525	Newbury	32	288			
Drumbo	115	P.V.	New Hamburg	672	1,441	Tavistock	716	1,080
Dublin	51	P.V.	Newmarket	1,883	3,800	Tecumseh	426	2,391
Dundas	2,870	5,245	New Toronto	11,494	9,469	Thamesford	217	P.V.
Dunnville	1,276	3,916	Niagara Falls	9,998	20,371	Thamesville	169	816
Dutton	250	830	Niagara-on-the-Lake	1,162	1,764	Thedford	125	598
			North York Twp.	8,114	V.A.	Thorndale	97	P.V.
East York Twp.	6,755	41,578	Norwich	425	1,301	Thorold	2,426	5,284
Elmira	1,312	2,069				Tilbury	1,426	1,923
Elora	501	1,185				Tillsonburg	1,395	4,602
Embro	168	420				Toronto	306,131	657,612
						Toronto Twp.	3,598	V.A.



# MUNICIPAL LOADS, JULY, 1944

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Wallaceburg	3,787	4,802	Neustadt	42	431	Lakefield	351	1,301
Wardsville	33	221	Orangeville	747	2,558	Lanark	88	686
Waterdown	275	867	Owen Sound	5,723	13,559	Lancaster	41	570
Waterford	426	1,294	Paisley	115	530	Lindsay	3,720	8,345
Waterloo	5,910	8,968	Penetanguishene	1,027	4,177	Madoc	200	1,130
Watford	418	1,023	Port Carling	332	520	Marmora	135	1,004
Welland	10,883	14,899	Port Elgin	659	1,415	Martintown	40	P.V.
Wellesley	145	P.V.	Port McNicoll	91	950	Maxville	101	811
West Lorne	173	768	Port Perry	346	1,175	Millbrook	94	749
Weston	4,348	6,333	Priceville	10	P.V.	Morrisburg	317	1,484
Wheatley	183	761	Ripley	106	420	Napanee	1,398	3,241
Windsor	47,271	118,040	Rosseau	40	305	Newcastle	155	701
Woodbridge	676	1,110	Shelburne	266	1,053	Norwood	147	710
Woodstock	7,400	12,339	Southampton	716	1,467	Omeme	195	630
Wyoming	63	538	Stayner	314	1,106	Orono	95	P.V.
York Twp.	16,146	77,175	Sunderland	89	P.V.	Oshawa	17,160	26,610
Zurich	153	P.V.	Tara	131	510	Ottawa	31,847	150,816
(66½ Cycle)			Teeswater	170	973	Perth	1,762	4,197
Bronte	176	P.V.	Thornton	38	P.V.	Peterborough	11,442	24,977
Oakville	1,223	3,369	Tottenham	102	532	Picton	1,304	3,400
Trafalgar Twp.	621	V.A.	Uxbridge	368	1,480	Port Hope	2,592	4,997
GEORGIAN BAY DIVISION			Victoria Harbour	107	979	Prescott	1,585	3,318
(60-Cycle)			Walkerton	1,051	2,534	Richmond	75	428
Alliston	407	1,700	Waubaushe	195	P.V.	Russell	78	P.V.
Arthur	156	1,089	Warton	290	1,750	Smiths Falls	3,049	7,741
Bala	358	355	Windermere	98	117	Stirling	346	947
Barrie	3,973	9,559	Wingham	774	2,149	Trenton	5,111	8,183
Beaverton	340	941	Woodville	73	439	Tweed	293	1,181
Beeton	157	617	EASTERN ONTARIO DIVISION			Warkworth	86	P.V.
Bradford	240	1,041	(60-Cycle)			Wellington	320	948
Brechin	49	P.V.	Alexandria	266	1,976	Westport	123	725
Cannington	270	761	Apple Hill	55	P.V.	Whitby	1,529	4,236
Chatsworth	106	333	Arnprior	1,284	4,019	Williamsburg	93	P.V.
Chesley	642	1,812	Athens	121	626	Winchester	416	1,017
Coldwater	191	545	Bath	58	325	THUNDER BAY SYSTEM		
Collingwood	2,953	6,249	Belleville	7,481	15,498	(60-Cycle)		
Cookstown	104	P.V.	Bloomfield	158	636	Fort William	13,586	30,370
Creemore	155	661	Bowmanville	2,693	3,850	Nipigon Twp.	214	V.A.
Dundalk	228	686	Brighton	536	1,462	Port Arthur	22,142	24,217
Durham	518	1,874	Brockville	4,900	11,112	NORTHERN ONTARIO		
Elmvale	171	P.V.	Cardinal	396	1,602	PROPERTIES		
Elmwood	76	P.V.	Carleton Place	1,956	4,143	Nipissing District		
Flesherton	62	452	Chesterville	315	1,094	(60-Cycle)		
Grand Valley	175	645	Cobden	113	643	North Bay	4,596	16,013
Gravenhurst	1,197	2,261	Cobourg	2,387	5,907	Patricia District		
Hanover	1,444	3,190	Colborne	219	960	(60-Cycle)		
Holstein	20	P.V.	Deseronto	277	1,002	Sioux Lookout	300	1,967
Huntsville	1,256	2,943	Finch	113	396	Sudbury District		
Kincardine	839	2,483	Frankford	176	1,095	(60-Cycle)		
Kirkfield	26	P.V.	Hastings	138	823	Capreol	250	1,660
Lucknow	434	856	Havelock	157	1,103	Sudbury	8,405	35,812
MacTier	134	V.A.	Iroquois	274	1,123			
Markdale	189	776	Kemptville	380	1,230			
Meaford	760	2,759	Kingston	14,437	29,545			
Midland	4,716	6,754						
Mildmay	159	764						
Mount Forest	584	1,936						





# WORTH WHILE

## *Wasn't it?*

• Citizens of Ontario have responded splendidly in support of necessary restrictions in the use of electricity. Inconvenience from "dim out" conditions, darkened store windows and partly lighted streets have been patriotically accepted in order to save power for the tools of victory. The additional voluntary savings of power by Ontario people also contributed substantially to the victories in Europe.

Your Hydro, which had the responsibility of carrying out the orders of the Dominion Power Controller in Ontario, is grateful for the co-operation of Hydro users.

One trying phase of the war is passing. Now, by conserving and concentrating our efforts for final victory, we may look forward with confidence to an early day when abundant power will be available for peacetime use. The added strength that we have built for war can then be used to bring greater light and safety to more Ontario streets and homes, and take over innumerable tasks on farms, in our homes, and industries.

Plan now to take full advantage, after victory, of the added leisure, convenience and safety that abundant electricity can bring to you.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO





HYDRO

# News

NOV 18 1944

AT ABITIBI CANYON



# On Guard

## 24 HOURS A DAY



# H

## YDRO SERVICE

### *Carries On!*

"Neither snow nor rain nor heat  
nor night stays these couriers  
from the swift completion of  
their appointed rounds."

*Herodotus.*

● When there's a storm, most people seek shelter, but that is when Hydro is busiest. Between darkness and dawn come hours of rest and sleep, but, with Hydro, every hour begins a new day.

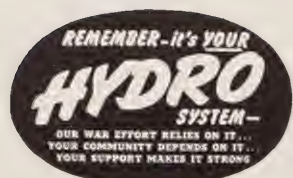
Light for homes, hospitals and factories—heat for blast furnaces—or to cook meals in your home—energy to turn thousands of motors in factories, mines, shipyards—this is the work of your Hydro.

Hydro is helping to shorten the war. Over 1,000,000 Hydro-electric horsepower is at work on war materials.

Let us all be thrifty in our use of Hydro. New war plants must be energized and existing plants are constantly being harnessed to the war effort. Let war needs come first.

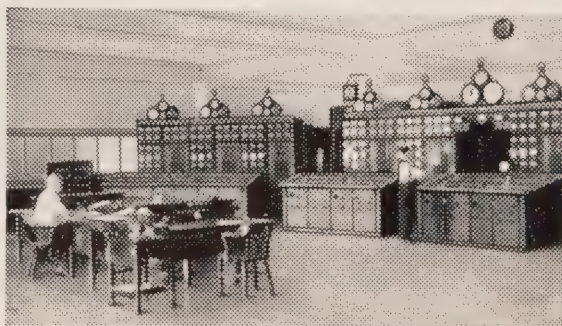
### AN APPEAL TO THE HOUSEWIFE

You can do so much to save electricity. Don't let the kettle over-boil. Watch the switches on your electric range—turn out all lights when not needed. Resolve to save some current every day to help Ontario's war industries.



### PICTURE AT RIGHT SHOWS A HYDRO CONTROL ROOM

Where the doors never close. Every hour of the day and night, every day in the year, watchful attendants are on the alert studying meters, keeping records and regulating the flow of Hydro current to consuming areas.



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO





## THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

PUBLISHED BY THE HYDRO-ELECTRIC  
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### The Front Cover



**T**HIS month's front cover shows an interesting angle on the power house at the Abitibi Canyon development. This photograph was taken by J. H. MacKay of the Commission staff, from the top of the west wall of the Canyon. Approximately 170 feet below the point where Mr. MacKay set up his camera are the dark, swirling waters of the tailrace. Power for many of the great mines and mining communities in Northern Ontario is generated at this Hydro plant, which is located 70 miles north of Cochrane.

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November, 1944

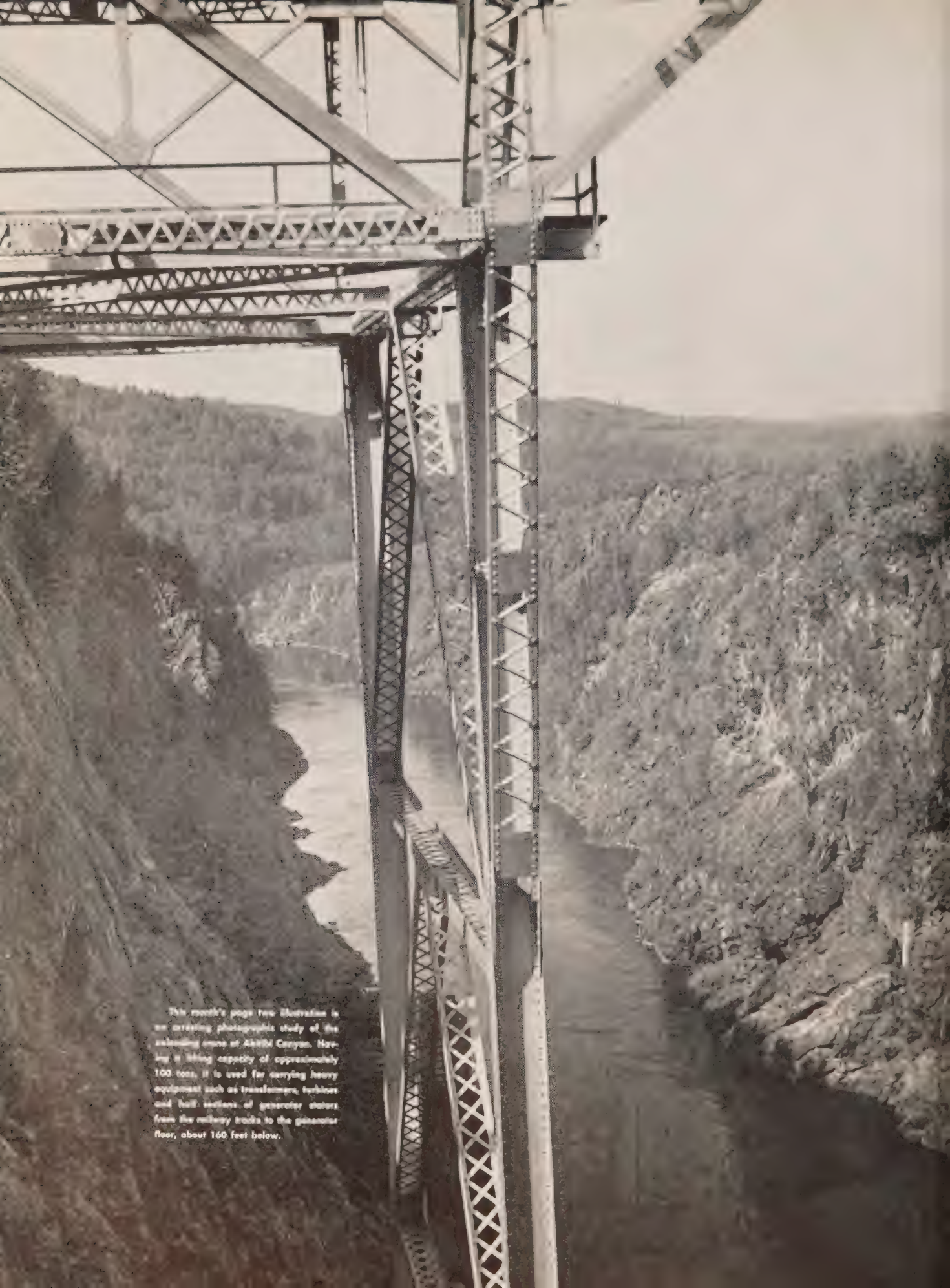
Number 11

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This month's page two illustration is an arresting photographic study of the astounding bridge at Akash Canyon. Having a lifting capacity of approximately 100 tons, it is used for carrying heavy equipment such as transformers, turbines and half sections of generator rotors from the railway tracks to the generator floor, about 160 feet below.



## \* Page Three \*

### IT'S NOT TOO LATE

**M**ANY vivid, first-hand impressions of what actually happened on D-Day when the Allies invaded the coast of France have been brought to Canadians at home by men who actually took part and through graphic films which were recorded as the landings were made.

The men who bring these messages are not eloquent orators who are seeking to exaggerate. They are soldiers who know what war means and exactly what our fighting men are up against. Most of them have been wounded in action. Some have lost arms and legs and others have lost their eyesight.

The messages they bring are straightforward statements of facts, and in passing along this information to people who have never known the horrors of war, they are rendering an additional service to their country and to the men who are doing the fighting.

Canadians who can listen to these soldiers without being awakened to their responsibilities are either callous and selfish or lacking in common sense. The one practical way in which the people on the home front can live up to their responsibilities is by lending their money to the point where all unnecessary spending is eliminated.

It is true that most of us have already lived up to one of the slogans of this Seventh Victory Loan—"One more than before"—but it's not too late to go over our budget and see if we can't squeeze out enough for an extra bond. The campaign closes on November 11, when the extent of Canada's effort to "Invest in Victory" will be known to the world.

Collectively, and as individuals, we must not fail.

### SERVING HYDRO

**H**YDRO is today doing so many jobs in the factory and home and on the farm that it has become second nature to pull a lever or turn on a switch whenever electricity is required—twenty-four hours a day. Hydro, in fact, has become so closely interwoven with the daily life of Ontario that it is accepted as naturally as the coming of the dawn in the morning and the fall of darkness at night.

That Ontario's great public ownership enterprise occupies this unique position is, in

itself, an eloquent tribute to the work of the men and women whose talents and lives are dedicated to the fulfilment of the aims and principles proclaimed by the far-sighted pioneers of Hydro.

In some cases, these men and women serve at outposts which are far removed from centres of population. One such example is to be found in the employees who are responsible for the operation and maintenance of the Commission's great Abitibi Canyon development, some seventy miles north of Cochrane.

Interesting impressions of this community and of the surrounding country are set forth in the article, "Canyon Colony," published in this issue of Hydro News.

Because these employees are on the job, the great mines of Northern Ontario served by this plant can operate at maximum efficiency, and the people who populate these mining areas can enjoy the many benefits of low-cost Hydro power.

### A SOUND POLICY

**T**IMELY and important observations on the conservation of Canada's land resources "in its widest interpretation" have been made by Dr. Thomas H. Hogg.

When addressing district meetings of the Ontario Municipal Electric Association recently, the Hydro chairman explained how conservation was closely linked with the further development of water power resources, and said that it was important to maintain and, where possible, to improve the regimen of the stream flow of power-producing rivers.

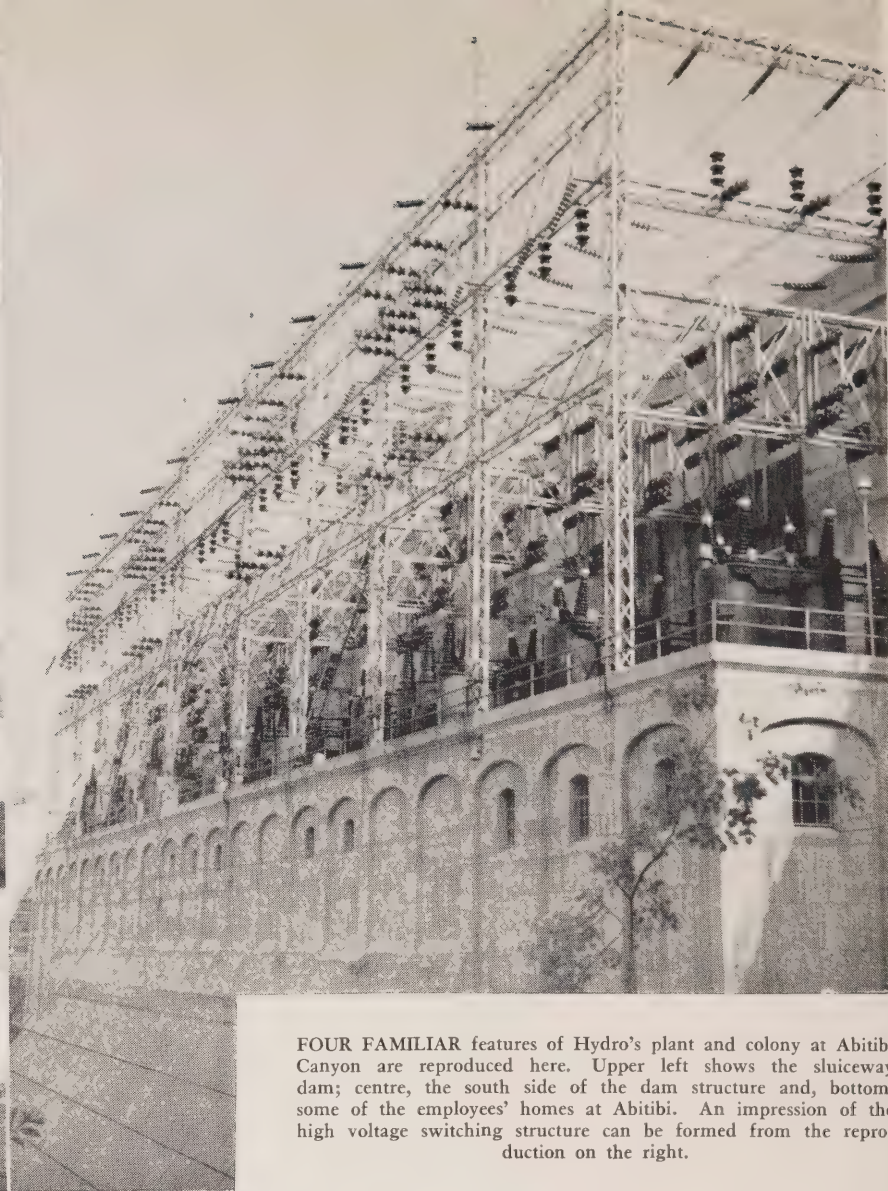
Because reforestation and rigid control of forest industries would help to maintain the uniformity of stream flow, he believes that land unsuitable for agriculture should be reclaimed for the forest, and that forest resources should be placed on an annual crop basis.

Canada must exchange some of her natural resources for the products of other nations or for raw materials in which she is lacking.

Dr. Hogg believes, however, that, as far as possible, "we first apply to our natural resources the skill of our workmen and the hydro-electric power derived from our streams."

Canadians generally are likely to be in agreement with the Hydro chairman's opinion that this would be a sound national policy.





FOUR FAMILIAR features of Hydro's plant and colony at Abitibi Canyon are reproduced here. Upper left shows the sluiceway dam; centre, the south side of the dam structure and, bottom, some of the employees' homes at Abitibi. An impression of the high voltage switching structure can be formed from the reproduction on the right.

# Canyon Colony

LIKE an oasis of modern civilization implanted amidst a wilderness of colourful Northern bush country, Abitibi Canyon is a 19½-acre pinpoint on the map of Ontario.

On this little chunk of land are over 30 homes and gardens, a general store and post office, a recreation hall, one of the most unique schools in Canada, many service buildings, modern plumbing, 130 men, women and children, a few dogs and fewer trees.

In this part of the country, bears and four-legged wolves scamper away at the sight of a man and the black flies do the attacking. In September, it is a place where the air has an exhilarating crispness, tempered by a brilliant sun that rides through a deep blue sky and where, by night, one sees the kind of a moon that gives song writers and others interesting ideas.

This place—Abitibi Canyon—is an outpost of Hydro—the site of a mighty power plant which is one of the nerve centres of Northern Ontario's great mining industry. Engineers will tell you that its present installed capacity is 240,000 horsepower; that its total potential capacity is in the neighbourhood of 300,000 horsepower; that last July it supplied something like 143,000 horsepower for mining; over 1,000 horsepower for municipalities and for the paper mills nearly 56,000 horsepower.

The plant itself is something like a quarter of a mile distant from the colony where the employees reside. To get a true mental picture of Abitibi Canyon, it should be remembered that the colony and the plant site are located within a 350-acre clearing which includes part of the forebay. This clearing constitutes the most effective protection against

*(Continued on page 6)*





FREIGHT AND passengers are brought into Abitibi Canyon by the Hydro train (above).



A UNITED church minister is shown above getting off the Hydro train.



LOOKING SOUTH towards the tailrace the visitor gets an interesting and picturesque view of the Abitibi Canyon.



ARRIVAL OF the Hydro train at Abitibi invariably arouses keen interest among the residents.



TWO MEN who lost their lives during the construction of the Abitibi plant are interred in a small piece of ground, marked off as a cemetery, in the nearby bush. The graves, shown above, are marked by crosses on which are inscribed the names of the men.



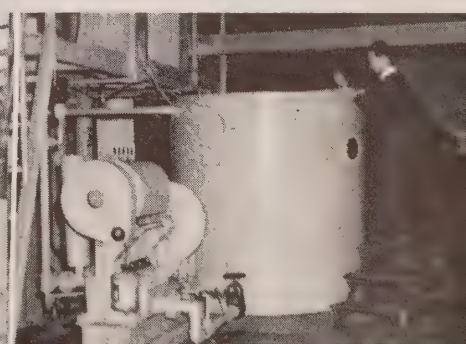
MICHAEL GODFREY is shown here making an analysis of water.

A. C. FERGUSON, superintendent of the Abitibi plant, was hard at work in his office when Hydro News got this picture.

THIS SHOT was taken in one of the workshops in the Abitibi plant and shows Jack Grant and C. B. Ferguson "on the job."



RAW WATER and alum mixture leave the mixing tube for the settling tank (below) where the aluminum hydroxide, colour and turbidity particles coagulate and settle out.





## CANYON COLONY

*(Continued from page 4)*

forest fires which have ravaged many timber areas in this section of the province. Here and there, one can see mute testimony to this bush menace in the form of stripped, lifeless sticks which are all that remain of once colourfully mantled trees.

On approaching the plant at Abitibi one cannot fail to be impressed by this great monument to man's engineering skill. A lady who saw it for the first time exclaimed: "It's beautiful!" The adjective, while not altogether apropos when referring to a power plant, does convey the general impression made upon the visitor who views the structure from a boat in the forebay on a calm, bright day when the contours of the dam are mirrored in the water. Bush, which extends as far as eye can see, the water, the rocks and the deep blue of the sky combine to make the setting one of rugged, picturesque beauty.

A steel and concrete dam structure, which is part of the gorge and spillway dams, extends for a distance of 900 feet from one bank of the Abitibi river to the other. From the west end of the dam one can look down upon the roof of the power house on which are located the banks of transformers. Below that, some 250 feet down from bridge level, are the dark, swirling waters of the tailrace. On either side of this 200-foot wide tailrace, the rugged walls of rock rise vertically to a height of 170 feet.

Parallel to the power house and tailrace, and separated by one of the walls of rock, a short stretch of intervening ground and a high retaining wall of concrete, are the sluiceway dam and the high water channel.

### Breath-Taking Spectacle

While looking over the plant at Abitibi, Hydro News had the thrilling experience of seeing four of the five 54-ton hydraulic sluiceway gates being opened at the same time. It was a spectacle which was breath-taking and memorable. As the massive, 45-foot wide gates slowly rose, the water seemed to surge through with a frothing, growling impatience and over the smooth, concrete sluiceways which sweep down to the rock bed below. Higher and higher moved the gates, and the growl of the rushing water rose to a roaring crescendo as it lunged, cascaded and boiled into a white, seething fury over the rocks. At times, it bounded in the air, and, catching the dazzling glory of the brilliant sun, swept far and wide in a multi-coloured spray from which emerged delicate rainbows in all their translucent beauty.

It was a spectacle which was almost terrifying in its menacing fury and yet magnificent and majestic in its dynamic power and beauty.

And as this great heaving mass of Abitibi water swept on its way in an ecstasy of new-found freedom, it seemed to break up into bubbling soap-like flakes and then surge forward on its northward course. The hum of the great generators in the adjacent power plant told of the skill of man in harnessing and controlling the driving force of this water for the development of Hydro power.

Like strands of fine thread from a distance, the transmission lines slope away from the interlacing network of steel on top of the plant and are caught under the arms of great steel towers on the western slope of the Canyon. Just over the high crest of this slope, rise two of these towers whose criss-cross framework stands out in bold silhouette

against the setting sun. They, in turn, seem to resemble the first giant milestones along the highways of power which recede into the gold-flecked clouds and the wide horizon beyond. Along these highways travels the power which is a vital force in speeding the march of Ontario's North to a realization of its industrial and economic destiny.

Any visitor to this impressive Abitibi Canyon development would be naturally curious to learn something about its construction and just how such a tremendous job was accomplished. Turning to engineers and looking over old records associated with the project, we learned that work on this plant was started in 1930 by the Ontario Power Service Corporation, a subsidiary of the Abitibi Power and Paper Company. Certain difficulties arose in 1932, as a result of which The Hydro-Electric Power Commission of Ontario was called upon to take over supervision of construction at the plant which was acquired by the province, the Commission assuming control in April, 1933. In the following month the first unit was placed in operation, and the installation of all five units was completed by May, 1936.

This site was selected because it possesses natural advantages for the construction of a development, in that the river channel is confined to a narrow gorge. Engineers point out that there are two interesting features associated with the construction of the project. The first was the procedure adopted in dewatering the site, and the second was the erection of a double-track railway bridge over the gorge from which major operations were carried on.

### How the Site was Dewatered

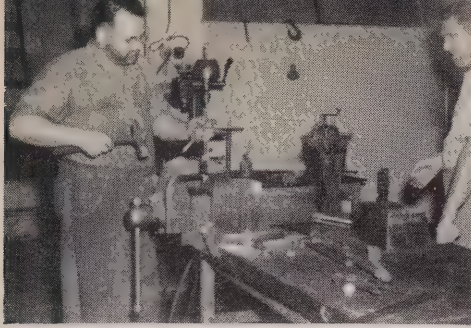
The very first work undertaken was the sinking of a shaft and the driving of two 30-foot tunnels used for the purpose of dewatering the site of the dam and the power house. Their inlets were upstream from the site and their outlets downstream. The sinking of a shaft, it was pointed out, made it possible for each tunnel to be worked from four headings at the same time, with the result that they were completed during the one season of low-water conditions or, in other words, during the fall and winter. It was, therefore, possible to divert water the following spring. During the same period cofferdams were completed shortly after the driving of the tunnels and the water level rose sufficiently to pass the flow of the river through the tunnels. In order to increase capacity and take care of flooding, one of the tunnels was completely lined with concrete while the floor of the other was lined. Engineering records also show that the shaft was offset from the tunnels and located midway along their length, approximately opposite the site of the power house and dam. This location made it feasible to use the shaft later for disposing of material excavated from the river bottom. When the work in the gorge was completed, the tunnels were sealed off, and the water again returned to its normal course.

Erection of a double track railway bridge across the Canyon provided access to the east side. This bridge was not only used for transportation but served as a construction platform and could support two 25-ton cranes. Upon completion of the work, the bridge was dismantled.

Some improvements were made in the tailwater channel, which increased the available head to some extent. The maximum height of the main dam is 294 feet and the length of the concrete gravity section is about 860 feet and of the earth section 740 feet.

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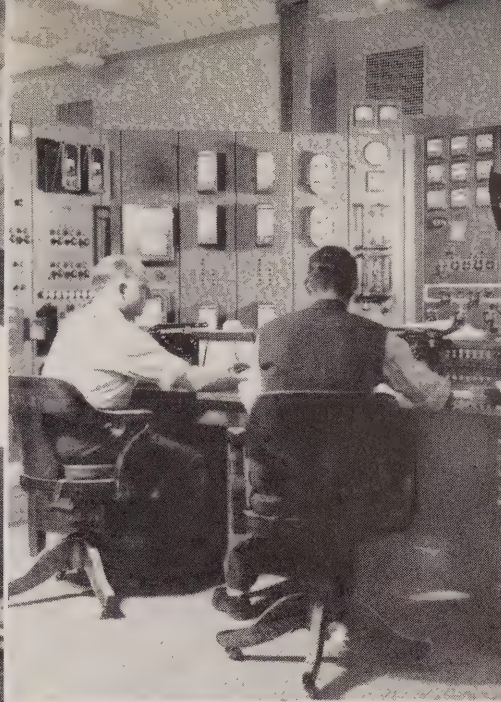




NORMAN WRIGHT, machinist at Abitibi, was too busy concentrating upon the job he was doing to notice the camera.



EMPLOYEES AT Abitibi are no different from other Hydro employees in that they have scheduled hours and plenty of work to get through before the end of the day.



WHEN THE visitor steps into the control room at Abitibi he discovers an imposing switchboard dotted with multi-coloured lights and an impressive array of dials and controls. In this room, too, he finds the telephone switchboard through which all the Colony's local and long distance calls are handled.



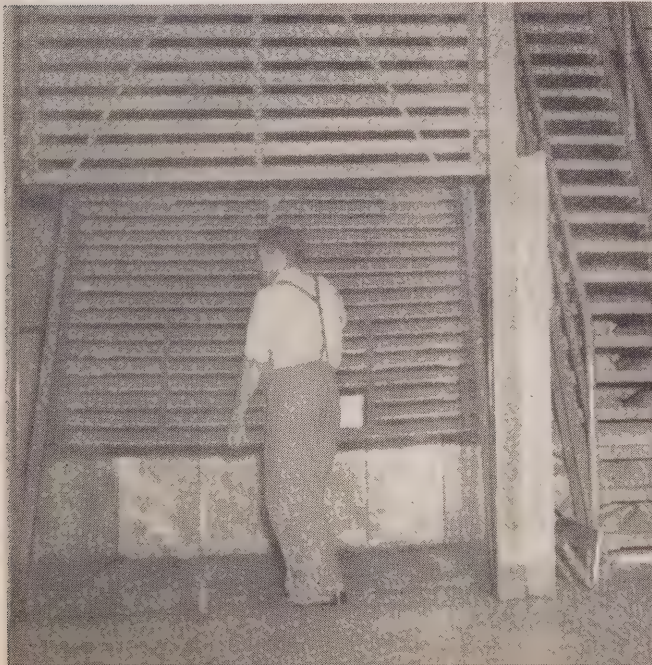
THIS PHOTOGRAPH was taken on the roof of the power house at Abitibi Canyon. Here, one gets a close-up view of the transformers.



IF YOU'RE just a little bit athletic and not afraid of heights you can get an interesting angle on the massive generators at Abitibi by climbing into the control cabin of the overhead crane.

# Canyon Colony

INSTEAD OF moving up and down, the elevator at the Abitibi power plant travels on a slope which parallels that of the dam which, Hydro News was advised, was built at the same angle as the pyramids. The illustrations shown here may give an impression of this elevator and the angle of the shaft.





## CANYON COLONY

(Continued from page 6)

Also of particular interest is the fact that the drainage area of the Abitibi river at the site is approximately 8,440 square miles. There are two major storage reservoirs—the Abitibi lake with seventy-two billion cubic feet of water, and Frederick House and Night Hawk lakes, with a capacity of approximately thirteen billion cubic feet.

Average flow of the river is approximately 11,000 cubic feet per second, and the regulated or usable flow for primary power is considered as being 6,500 cubic feet per second.

The Abitibi river, which has its source at Abitibi lake, flows north for a distance of 210 miles into the great Moose river at a point that is approximately 8 miles from tidewater. Abitibi Canyon development is approximately 100 miles from tidewater and close to 70 miles north by rail from Cochrane.

Passengers going to Canyon Colony travel by rail to Fraserdale station where they board the Hydro train and proceed for a distance of some three and a half miles to the Colony's siding where the general store and post office are located. When the visitor steps off the Hydro train he sets foot on Abitibi Colony.

The significance of the word "Abitibi" can be interpreted in two ways, according to A. C. Ferguson, the quiet, kindly and friendly superintendent of this great Hydro development. The more probable one, he believes, is "turbulent water." The other interpretation is "muddy water" which is descriptive of its dark brown colour. The colouring matter is of a colloidal nature, being of finely divided clay particles which remain in suspension.

When the visitor sees this plant for the first time there are many features which capture his attention. Perhaps one of the most arresting of these features is the great height of the structure from the top of the bridge to the power house in the dark canyon below. To get to the floor of the plant, and to intermediate stops, one makes an entrance through the door of a cubicle-like structure located on an elevated section of the dam. Inside this large cubicle is the top limit of a giant elevator which has a carrying capacity of 3 tons.

### At Same Angle as Pyramids

This is no ordinary elevator. At first sight, it looks like an animal cage, and then, instead of moving up and down vertically, it travels on an angle that parallels the slope of the dam, which was constructed at the same angle as the pyramids.

When the elevator is in operation, red lights on box indicators on each floor illuminate the words: "In use." When all is clear, one has only to push the manual control and the elevator clatters and clicks its way to the floor from which the signal had been given. One of these controls is located on each landing and, of course, there is one in the elevator itself. To enter, one has first to lift a safety gate and then reach down to the elevator floor level and pull on a second gate which swings up at a sloping angle, and which has the appearance of an open venetian blind. This gate rolls back over the roof of the conveyance and one can enter. Before the elevator can be set in motion, however, both gates must be closed again. It starts slowly at the first turn of the control and then suddenly accelerates its descent down the long sloping tunnel. From top to bot-

tom it is a distance of 279 feet and, only once a year, one day in June, does the sun ever shine down this dark shaft.

There are many other features of interest at the plant such as the control room with its impressive switchboard which, to a layman, is as mystifying as it is fascinating. Levers, dials, graph-recording instruments, multi-coloured lights and, at the back of the board, a maze of interlacing wires, all seem to lend an atmosphere of mystery to this spacious inner sanctum of power where the operators coolly and quietly carry on their work at a long desk facing the switchboard.

Many interesting stories could be written on the diversified duties carried on in the power house which has a completely equipped machine shop, parts department, a general office and a room where rows of batteries are available to provide emergency lighting service.

On the generator floor are four units, the fifth one now being in service at the Commission's DeCew Falls development.

At the power house is the telephone switchboard through which is handled not only all the local calls within the colony itself, but which links this Hydro outpost with the outside world through the Cochrane exchange.

In the plant, too, all water used in the colony is purified. Something like 12,000 gallons per day are used.

But there's more to Abitibi Canyon than the development. There are the people, their modern, comfortable homes, their hobbies, general day-to-day activities, and the colony's "Millionaires' Row" and "Quality Hill." All these subjects are interesting to the visitor who, for all too brief a period, has the privilege of mingling with these friendly, hospitable folk.

At last count there were 35 men, 42 women, 27 boys and 24 girls in this Hydro community which contains 30 permanent homes, 4 temporary houses and 5 privately owned houses. The smallest dwelling has 4 rooms and the largest, 8 rooms. There is also a well-equipped staff house where single men and visitors reside and where Mrs. Betty Hughes, a pleasant lady of action and high attainment in the kitchen, directs operations.

### Recreational Facilities

The centre of the Colony's "night life" or big social events is the compact but very modern community hall which has not only an excellent stage and dance floor but one of the most up-to-date projection rooms to be found anywhere. In this hall, movies are shown every two weeks. A recording machine is operated in conjunction with the hall's public address system when dances and parties are conducted. Volley ball, badminton and other games can be played on the floor of the hall, while downstairs is a well-equipped billiard room.

On the grounds of the Colony are facilities for playing baseball and tennis, while an enclosed rink, 105 feet by 45 feet, is used for skating and hockey. There is also a 50-yard indoor shooting range for small calibre rifles.

The \$3,000 expended on recreational equipment by the Commission for use in the Colony is being paid off by the recreation club over a ten-year period, all financing being taken care of by annual membership fees. Members of the board of directors of the club are elected for a three-year period, one member coming on each year. They are re-

(Continued on page 10)





MODERN AND comfortable, the staff house at Abitibi occupies a commanding position.



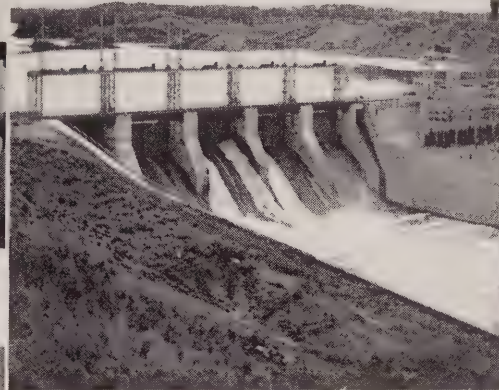
THE EMPHASIS in this illustration is definitely on "the approach" to the Abitibi plant.



"WHAT'S COOKING?" is the sixty-four dollar question in the staff house kitchen.



ONLY ONE sounding of the gong is necessary at meal times in the staff house.



WHEN THE five 54-ton hydraulic gates move up, the water rushing over the sluiceway dam (above) at the Abitibi presents a stirring spectacle.



CHILDREN OF the Colony march into hospital for a check-over.



MRS. BETTY Hughes, staff housekeeper, at work in the kitchen.



CENTRE OF the Colony's big social events is the community hall shown here. Billiards, volleyball, badminton, dances, parties and movies can be enjoyed in this modern rendezvous.

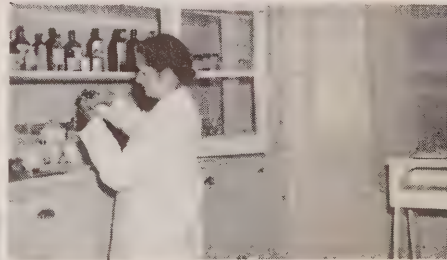


THESE STOIC, well-behaved Indian folk seemed to enjoy their visit to hospital.



MRS. LUXTON was getting the low-down on something good when Hydro News got this shot one day—just before lunch hour.

THIS PHOTOGRAPH proves that there is one car or car-truck at Abitibi Colony. It's an old Chevrolet, and the man behind the wheel is J. H. MacKay of the Commission staff.



NURSE CHAPMAN is shown here at work in the well-equipped hospital. She was preparing a dressing at the time.

J. E. LeBLANC appears to be as much at home with a billiard cue as he is at the throttle of the Hydro railway engine.



NO, IT didn't hurt in the least! This little Indian baby, however, was quite curious when the Hydro nurse pricked her arm.





## CANYON COLONY

(Continued from page 8)

sponsible for the general operation of the club's activities including the co-ordination of committees such as the book and music and motion picture committees.

Victory gardeners in Southern Ontario would probably blink in amazement at the size of some of the garden crops the Hydro folk at Abitibi are pulling out of the ground. These crops include potatoes, carrots, beets, cabbage, strawberries, raspberries, celery, peas, beans, chard, spinach, lettuce, salsify, onions, endive, parsley, parsnips, squash and vegetable marrow. Corn, tomatoes and cucumbers are grown but they come to maturity only in exceptional years. While many Hydro victory gardeners in Southern Ontario have grown excellent produce, some items on the list might be regarded as "small potatoes" alongside the same items in the gardens of their Northern brothers. At Abitibi, victory gardens are not new. They started in to plant vegetables some seven years ago.

But it's not only vegetables they grow. Some of the flower gardens are almost replicas of these alluring colour pictures one finds between the covers of seed catalogues.

Early and late frosts are, of course, the bugbear of these Northern gardeners. Spring officially starts on April 30, summer on June 15, fall on September 1 and winter on October 15. The maximum temperature recorded during recent years was 100 degrees on July 12, 1936, and the minimum was 57 below zero on February 8, 1934. The heaviest snowfall of 132.2 inches was recorded during the winter of 1933-34, and the lightest snowfall, 44.5 inches, occurred in 1941-42. The heaviest rainfall of 35.28 inches was recorded in the year 1941, and the lightest, 19.76 inches, in 1936.

### Homes are Modern

Most of the homes in the Colony are constructed round an ellipse-like clearing in centre of which are victory gardens, the tennis court and baseball ground. These particular dwellings are not just log cabins or shacks which have been thrown together. They are modern homes—more modern than many city residences—some are of frame construction and others of frame and stucco. When the visitor steps inside one of these houses he discovers highly polished hardwood floors, an up-to-date kitchen equipped with electric range, electric refrigerator and other appliances. The general interior appearance of these Abitibi dwellings, the colour schemes, the way in which the furniture is arranged reflect the good taste of the ladies who live in this community. These ladies also score heavily when it comes to cooking. The explanation may be found in an observation made by one Abitibi homemaker who said: "We've just got to be good at our job. We can't run to the baker or a delicatessen store when we require something in a hurry. We've got to do these things ourselves."

Speaking about stores, however, there is the one general Hydro emporium in the community operated under the direction of George Cooper. In this store, one finds well stocked shelves on which are everything from canned soup, salmon and milk to shaving cream, dandruff remover and flea powder for dogs. In looking round the shelves, one forms the impression that a large department store has been compressed into a few square feet. This is a Hydro market for the Hydro folk, and inside, too, is the post office which

is under the capable supervision of Mrs. R. H. Frampton. The real excitement round Mr. Cooper's Colony grocery starts when the Hydro train pulls in from Fraserdale where it has been loaded with freight and food of all kinds brought in on the T. and N. O. Railway.

Just before the train pulls in the store is cleared and closed and then a queue of Hydro folk forms outside waiting while the storekeeper takes in supplies, and while Mrs. Frampton sorts mail. There are two south-bound and two north-bound trains a week. The north-bound "flyer" is the one which really "delivers the goods!"

Another interesting feature of Abitibi is its educational institution. The school is believed to be one of the most unique of its kind in Canada. Because the Colony is far removed from cities and towns, the Hydro school has a special dispensation from the Ontario Department of Education, making it possible to take pupils all the way from kindergarten to senior matriculation. Latest figures show that there are at present 26 children attending public school and 8 in high school.

The principal of the school is Miss Hazel Chalmers and the assistant is Miss Gwendolyn Roach. After meeting these two very charming and competent ladies, one cannot but envy the good fortune of the students. In fact such a meeting immediately prompts ideas about taking a refresher course!

The school library, according to Miss Chalmers, is unique and compares favourably with libraries in large colleges. And the science laboratory—well Miss Roach will tell you that although it is small it is one of the finest she has seen in the matter of equipment. Each student can do his own experiments under ideal conditions.

And speaking about equipment, the Colony's hospital, which is under the direction of Miss Dorothy Chapman, R.N., has excellent facilities for taking care of emergencies.

### "Three in a Row"

The Colony has more than homes, a school, a store and a hospital, it has its "moments." There have been times when the bulky forms of bears have been seen nearby, and then there was that remarkable event known either as "One, two, three," or "Three in a row." This, of course, is linked with the arrival of three babies on the same day—January 5 of this year—whose mothers live side by side in houses 10, 11 and 12. According to some of the men in the Colony, the ladies in the immediate vicinity of these stork-favoured homes, were a little perturbed and debated the matter in camera at some length.

The babies who were born on the same day are Bobby, son of Mr. and Mrs. James Sparling; Gladys, daughter of Mr. and Mrs. R. C. Byers, and Diane, daughter of Mr. and Mrs. V. Maisonneuve, who have now left the Colony.

Another point of interest is the fact that the employees now at Abitibi have a combined record of nearly 290 years in the service of Hydro in various parts of the province.

According to the latest information made available to Hydro News, the following are the employees who are engaged in carrying on the day-to-day duties associated with the operation of this important northern development: superintendent, A. C. Ferguson; maintenance supervisor, G. O. (Guy) Armstrong; technical aide, R. H. Frampton; chief clerk, C. E. Rolfe; clerk, C. C. Cunningham; clerk-

(Continued on page 31)





JOAN, YOUNGEST member of the Cooper family, made her Abitibi debut in a basket.



SCHOOL'S OUT! Here, Miss Hazel Chalmers, principal of the Canyon school, gets the kiddies into line.



THE CAMERA fascinated this little Indian lad who is a pupil at Colony School.



IN THIS compact little building Hydro folks at Abitibi do their marketing.



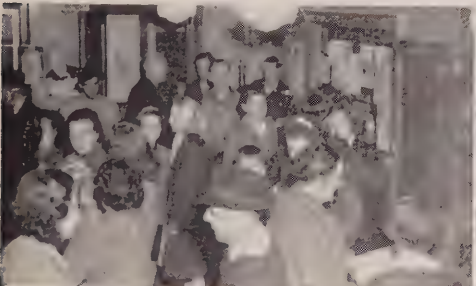
HERE ARE some of the public school students at Abitibi. This seat of learning is believed to be unique in Canada in that a child can go all the way from kindergarten to senior matriculation under one roof.



THE HYDRO News camera created a temporary diversion of interest in the class-room.



A CONSIGNMENT of peaches had just arrived when this picture was taken.



THIS IS a Canyon Colony conception of a bargain basement hunt. Scenes such as this are witnessed after the Hydro train pulls in.

GEORGE COOPER, Hydro storekeeper, can make a cash register sound like a machine gun.



AN INTERESTING feature of the Canyon Colony's school is its well-equipped science laboratory. This illustration shows Miss Gwendolyn Roach, science teacher and a senior pupil engaged in an experiment.



IN THIS section of the class room kiddies were hard at work when Hydro News peeked around the corner to click this one.



EVERY SUNDAY morning the children attend Sunday school which is conducted in one of the rooms in the recreation hall. Miss Mulligan is shown here conducting the class.







**MEET THE** Fergusons!

**MR. FERGUSON** was in his hobby corner in the basement of his home when this picture was recorded.

**HERE ARE** the Framptons—Dorothy, Dick, Mrs. Thomson (Mrs. Frampton's mother), Richard and Barry.

**WHEN OCCASION** demands, Mrs. Thomson can get around in a hurry.

**HERE IS** Dick Frampton with some of his victory garden potatoes.

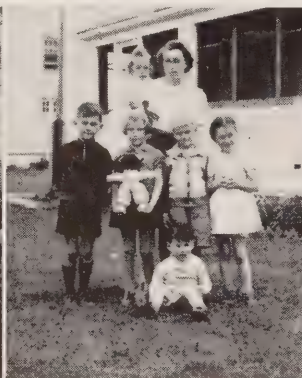


**IN THIS** corner are the Armstrongs. Guy who is maintenance supervisor, his wife and family.

**JACK REISE**, has a ready smile for everyone. Here is Jack with granddaughter

**HAROLD CHRISTIAN** provides transportation for Mr. Christian, Jr.

**THIS IS** Millionaires' Row which is a busy thoroughfare when mothers, babies, perambulators and kiddy cars join in the parade.



**ERNEST DALEY**, electrician foreman at the Abitibi plant, was in the garden with his wife.

**JACK REISE** proudly paraded members of his family group when Hydro News called. It was too good a picture to miss.

**THEN THERE** was Mrs. S. L. R. Bull who, judging by this picture, was having quite a busy morning.

**CHARLIE WADE**, utility foreman at Abitibi, relaxes in his comfortable sunroom.

**SUNSET AT** Abitibi Canyon.

**ANGUS ARM-STRONG** showed Hydro News one of Abitibi's small cauliflowerers.

**WHEN IT** comes to making pottery, Mrs. James Sparling is a recognized authority. She was engrossed in her hobby when this picture was taken.

**MEET THE** junior member of the Sparling family. His name is Robert, but they call him "Bobby."





# SUGGESTS ANNUAL CROP BASIS FOR REPLENISHABLE RESOURCES

**Conservation "In Its Widest Interpretation"  
Stressed By Dr. Thomas H. Hogg —  
Addresses Joint Annual Meeting of Dis-  
tricts 7 And 8 Of The O.M.E.A.**

**E**NCOURAGEMENT of national policy to export finished goods rather than raw materials and, as far as possible, limit the export and use of replenishable resources to an annual crop basis, was advocated by Dr. Thomas H. Hogg, chairman of The Hydro-Electric Power Commission of Ontario, in an address before the annual meeting of Districts 7 and 8, Ontario Municipal Electric Association in London on October 18.

W. Ross Strike, O.M.E.A. president, and H.E.P.C. commissioner, announced that the executive of the parent body had set up a committee to study the whole question of the taxation of public utilities and that this committee would make recommendations to the main body of the O.M.E.A. at its annual convention next February.

"The snowball of Hydro taxation is being rolled larger and larger," Mr. Strike said, "and the time has now come when Hydro municipalities should take some stand on the matter."

E. V. Buchanan, London, urged that a survey be made of the experience of those municipalities who had embarked on electric range and electric water heater campaigns. "From this collective experience," Mr. Buchanan said, "the smaller municipalities which have never embarked on these campaigns could learn of the pitfalls and the advantages to be gained. It would also enable the executive to make some recommendation to the main body of the convention and aid in the formulating of a definite policy with regard to bonusing consumers with free installation of electric range wiring and free installation of electric water heaters," he concluded.

"Municipalities should prepare their plans now for post-war load expansion," Dr. Hogg told the delegates in answer to questions during the discussion period. He warned, however, that they should not move too fast at present, since some doubt still existed regarding conditions immediately following the capitulation of the German armies.

"It seems to me that some municipalities have the wrong slant on the installation of flat rate electric water heaters," R. T. Jeffery, chief municipal engineer declared. "I believe that the municipalities should go on installing these heaters regardless of whether they are on the peak or off the peak. Hot water heaters are a convenience to which every Hydro user in the Province of Ontario is entitled."

Addressing the delegates following the noon luncheon in the Hotel London, Dr. Hogg pointed out that matters affecting power supply are now of common interest over the



J. B. HAY, (left) of London and Garnet Edwards, Windsor, were joint chairmen of the business session.

whole of Southern Ontario. He said that projects as far away as the Ogoki or the Ottawa river, were of interest to the assembled delegates since they affected the power supplies available to the Southern Ontario system of which they were a part.

While referring to the successful operation of the storage reservoirs constructed or improved by the Commission in connection with its existing power developments, he made two suggestions. One concerned the provision of power supply, the other its profitable utilization.

"In regard to the further development of our water power resources it is important to maintain, and where possible, to improve the regimen of the stream flow of our producing rivers," he said. "This, in turn, involves conservation of our land resources in its widest interpretation. The fertility of our land is basic. It has been said that our civilization depends on the top six inches of our soil. To preserve this from loss by erosion, and in other ways, contributes to the supplies of ground water, to the fertility of our soils, and to the satisfactory run-off of our rivers," he declared.

He said that lands unsuitable for agriculture should be reclaimed for the forest, and pointed out that in this country, especially in the areas to the north, forest growth was relatively slow as compared with the growth in the Southern United States, and that it was not too early to place our forest resources on an annual crop basis. He declared that reforestation and rigid control of forest industries would help to maintain the uniformity of stream flow, and that this could be aided by the construction of storage reservoirs at suitable sites.

"There has developed," he said, "largely since the last war, a new approach to the problems of conservation of our natural resources. It is an approach which sees clearly that no natural resources conservation programme can be suc-





THE LUNCHEON was just over when the photographer caught this group comprising Paul Willis, and George Galloway, R. M. Durnford, Claude McMann and E. J. Blake of Sarnia.

cessful unless it has, on the one hand, the goodwill of the established local governing bodies, and on the other, a co-ordinating conservation authority empowered to plan and carry out measures for the greatest good for the greatest number," he continued.

He pointed out that the administrative land areas of Southern Ontario were laid out before settlement was far advanced, and their boundaries had nothing in common with watershed divisions.

He said that there was now in the Grand River Valley Conservation Commission, a body appointed by the councils of participating municipalities to carry out a conservation policy of benefit to all who lived in the valley. Continuing, he said that the primary purpose of the Conservation Commission had been flood control, but the elimination of menacing low-water pollution was a benefit, of equal if not greater value, to the residents of the valley. This, he said, was evidence of the close relationship between all watershed problems. Although only one main unit, the Shand Dam, had as yet been completed, he declared that this dam had already been effective in preventing disastrous floods in the lower river and in storing water for summer cleansing flow.



R. T. JEFFERY (centre) and Hon. George H. Challies were deep in a discussion with one of the delegates when the photographer snapped this one.

"The Thames River with a drainage basin of 2,200 square miles," stated Dr. Hogg, "is almost as important a river as the Grand, which drains an area of 2,600 square miles. No doubt, to many of you, it is even more important. You have had serious floods in this city, and unless conservation and control measures are taken, they will inevitably recur."

The Hydro chairman pledged the continued co-operation of the Commission in conservation measures, pointing out that at the request of the government, it had carried out the survey of the Grand river which preceded the passing of the conservation measure affecting that river.

"The Hydro-Electric Power Commission is intimately concerned with all measures designed to conserve and improve river conditions throughout the Province, for conservation measures lead to an improved stream flow and beneficially affect the operation of existing and future power developments," he declared.

He pointed out that true conservation also meant wise use of natural resources, and suggested that before exporting these resources, we should endeavour to apply to them the skill of our workmen and the hydro-electric power



THE PHOTOGRAPHER caught "Sid" Arbour, Tecumseh; V. A. Beacock, H.E.P.C.; J. R. Sullivan, Woodstock, and A. P. St. Louis, Riverside, in this group.

derived from our streams. He said that it was reasonable that Canada, which was blessed with great natural resources, should share resources necessary to the industrial existence of other nations, receiving in payment, products or raw materials in which we were deficient.

"It nevertheless remains a good national policy to encourage the export of finished goods rather than raw materials and, as far as possible, to limit our use and export of replenishable resources to an annual crop basis," Dr. Hogg concluded.

The luncheon was under the chairmanship of J. B. Hay of London, while alderman G. H. Ferguson extended a civic welcome to the delegates. The business session, following the luncheon, was under the joint chairmanship of J. B. Hay of District 7, and Garnet Edwards of District 8.

H. R. Henderson, Woodstock, was elected chairman of District 7, while J. B. Hay, London, and Percy Locke, St. Thomas were elected directors. Garnet Edwards announced that the election of officers for District 8 would be held at a later date.



RETIRING PRESIDENT, B. O. Salter (left) of the Ontario Hydro Quarter Century Club, extends a welcome to A. H. Hull of Toronto, newly-elected president.



IN THE lower left picture the ladies are shown lining up for their certificates, and on the right, is a general view of part of the gathering.

# "SHOULDER to SHOULDER"



**N**EITHER too young nor too old might describe the gathering of Hydro folk at the Ontario Hydro Quarter Century Club banquet held at the King Edward Hotel on October 20.

This annual reunion, which was attended by 365 members, from all parts of the province, was a friendly "get together" at which acquaintances were renewed and reminiscing was in order.

The evening programme, which was presided over by president B. O. Salter of Toronto, was devoted to brief, lively speeches; community singing; a floor show; the presentation of the 25-year certificates and gold buttons by Dr. Thomas H. Hogg, H.E.P.C. chairman; and lucky number prizes drawn by W. Ross Strike, H.E.P.C. commissioner.

There was one solemn note in the proceedings when the gathering paid reverent tribute to sixteen members who had passed away since the last meeting.

At the present time there are 583 enrolled members in the club, and during 1944, over 100 have or will become eligible for membership.

A new feature of the club is the publishing of a loose leaf booklet containing a permanent record of its present members. This list has been compiled to show the year in which the member actually completed 25 years of service with The Hydro-Electric Power Commission of Ontario. It is the club's intention that additional sheets showing current members will be issued annually for insertion, and in this way keep the record up to date.

Officers elected for the ensuing year are: A. H. Hull, president; G. L. Rous, vice-president; S. L. Eisenhofer, secretary; and Thomas McFadyen, treasurer, all of Toronto.

The following are the names of members who received certificates and buttons this year:

(Continued on page 18)





THE LADIES in this group are, left to right: Alberta McCallister, E. G. McNichol, Gladys B. McLaughlin, Gertrude L. Martin, Beatrice Fletcher, Belle Martin, Mabel I. Evans and Grace C. Coughlin.

DR. T. H. HOGG, H.E.P.C. chairman, is seen presenting 25-year certificate and gold button to R. H. Bergh of Toronto. Over 100 members received their certificates at this year's gathering.

## "Shoulder to Shoulder"

JUDGING BY the interested expression on president B. O. Salter's face (left), Dr. Hogg must have been telling him a good story when the photographer snapped this one. The picture on the right shows one of the ladies' tables. For Alice P. C. Parsons (foreground) it was a two-fold celebration, her birthday having fallen on that day. The lower pictures are cross sections of the gathering, taken while the floor show was in progress.





# SEES HYDRO AS HANDMAIDEN TO POST-WAR PROSPERITY

Will Contribute Increasingly to Raising Standard of Living  
in Both Urban and Rural Areas

An Address by DR. THOMAS H. HOGG,

Chairman, The Hydro-Electric Power Commission of Ontario, at District No. 1 Ontario  
Municipal Electric Association Convention in Kingston, October 6, 1944.

**D**URING the past year there has been a steadily increasing consideration on all sides of the problems to be faced when hostilities cease. Discussion, which even a year ago seemed to be somewhat academic and, after four years of war, almost unreal, has in the rapid change of the war situation become of urgent practical importance. In Great Britain and in those portions of Europe which have met the physical impact of war, the tasks of repair and rehabilitation are so obvious that for each nation the back-log of work to be done makes the question not "What is to be done?" but "Where shall we begin?" In Canada as in the United States the problems concerned with the re-establishment of a peace-time economy are different, but their solution also will tax the ability of our most able and resourceful statesmen, administrators, and industrialists.

During the war Canada has increased greatly not only its industrial output but also its ability to produce. Even prior to the war we had become one of the great exporting nations of the world. Inevitably, therefore, Canada's post-war progress is closely tied up with world trade and influenced very greatly by the policies and practices of our great neighbour to the south. Canada, therefore, is forced to consider questions such as: How much of our pre-war trade can we retain or regain? What competition shall we have to meet knowing that so many countries have also increased their industrial activities? What profitable markets can be found and developed for our industrial and agricultural products? What is to be our immigration policy? What imports are we prepared to accept in payment for exports?

Unquestionably Canada's immediate future, as its recent past, will be greatly influenced by its export trade—both in agricultural products and industrial goods. We have many natural advantages and rich resources and these assets can be used to good advantage to maintain and improve our national prosperity. Among these assets low-cost hydro-electric power takes a high place.

If, however, we are to have the success in our overseas trading which we need and desire, the social structure in Canada must also be such as to create and maintain the

conditions that make possible the maximum of healthy production, and production of such efficiency that it will be competitive in the world's markets.

Now an important and accepted part of Ontario's social structure is the public ownership of its water-power resources and their development by Hydro. Hydro service beneficially affects our ability to produce goods competitively for export in two main ways. It provides low-cost power in ample quantities for our factories and, equally important, it contributes very greatly to the raising of the standard of living, and to making home life pleasant both in urban communities and rural districts. Such conditions attract and stabilize expert labour, and if supported by wise immigration policies, will help to make Canada attractive to the best elements of European peoples, particularly our British connections, who, if we can attract and hold them, will as in the past bring to our great Dominion varied and profitable technical skills helpful alike to our agricultural and industrial economy.

In order, therefore, to ensure that Hydro may continue to make the best possible contribution to our social structure, it is necessary to continue to improve its operating efficiency. You will remember that last year I referred to the successful operation of the Barrett Chute development, to the beneficial influence of storage reservoirs and to the severe floods and storms that had recently been experienced in Eastern Ontario. Last winter there was no repetition of the disastrous storm of December, 1942, or of the floods which occurred in the early summer of 1943. In contrast to the previous year the season of 1943-44 was deficient in rainfall and in stream flow and the improved storage provided in Bark lake and in other lakes proved of very great value to the Eastern Ontario power supplies.

However, since we met a year ago the power supply situation has changed. The amalgamation of the three systems serving Southern Ontario, which I forecast in the talks I gave last year and the year before, has now become a fact and Eastern Ontario has widened its power supply interests to embrace the whole of Southern Ontario. Thus the developments at Niagara and along the Ottawa river,



and even the diversion at Ogoki—1,000 miles to the west—have become of practical interest to Hydro power users of Eastern Ontario.

In brief, it may be said that the amalgamation has enlarged and made permanent the benefits already enjoyed in part as a result of the close co-ordination and inter-connection of generating and transmission facilities previously achieved.

While referring to the successful operation of the storage reservoirs constructed or improved and operated by the Commission in connection with its existing power developments, may I repeat two suggestions I made while speaking to the general meeting of the O.M.E.A. last February with regard to post-war planning. One suggestion concerns the provision of power supply, the other its profitable utilization.

First, in regard to the further development of our water power resources it is important to maintain, and where possible to improve, the regimen of the stream flow of our power producing rivers. This, in turn, involves conservation of our land resources in its widest interpretation. The fertility of our land is basic. It has been said that our civilization depends on the top six inches of our soil. To preserve this from loss by erosion, and in other ways contributes to the supplies of ground water; to the fertility of our soils, and to the satisfactory run-off of our rivers.

Lands unsuitable for agriculture should be reclaimed for the forest. In this country, especially in the areas to the north, forest growth is relatively slow as compared, for example, with the growth in the Southern United States and it is not too early to place our forest resources on an annual crop basis. Reforestation and rigid control of forest industries will help to maintain the uniformity of stream flow and this can be aided by the construction of storage reservoirs at the head waters of our streams.

### Story of Land Misuse

There has recently been published jointly by the Dominion and Ontario governments a valuable report on the Ganaraska watershed or drainage basin which lies to the north of Port Hope, which town has on many occasions been damaged by destructive floods. This intensive study of a selected small drainage basin in Eastern Ontario with an area of about one hundred square miles tells the sad story of unwise settlement and land misuse. But it also points the way to the possibility of rehabilitation in a profitable way—leading to employment for many and an improved countryside with a restoration of those benefits which depend upon a wisely controlled and developed drainage system.

I have not time to review the report but it is of interest to note that about the year 1865 there were 36 dams on the Ganaraska river with 35 saw mills, 18 grist mills and 5 woollen mills. In 1942 only 15 dams were in operation—8 serving mills, 1 a power dam and 6 for fish ponds.

The Ganaraska river, even if fully conserved, would not provide water power of a size suitable for modern central station electrical supply, but the recommended reforestation at its head waters and in other areas to the north would improve the water supply to Rice lake and the Trent river on which are situated several Hydro generating stations. The Hydro-Electric Power Commission is in-

timately concerned with all measures designed to conserve and improve the river conditions throughout the Province.

True conservation also means wise use and my second suggestion is that before we export our natural resources we should endeavour to apply to them the skill of our workmen and the hydro-electric power derived from our streams. In a country blessed, as is Canada, with large natural resources it is reasonable and mutually beneficial that we should by export share with other nations certain of our natural resources necessary to their industrial life, receiving in payment the products of their specialized manufacturing skills or raw materials in which we are deficient. But it nevertheless remains a good national policy to encourage the export of finished goods rather than raw materials and as far as possible to limit our use and export of replenishable resources to an annual crop basis.

### Power Supplies After the War

After the war Hydro must continue to provide an adequate supply of low-cost power for industrial, agricultural and domestic use. This, of course, is obvious. How far then do present supplies of power promise to meet post-war needs? You have been told from time to time of the immense quantities of Hydro power that directly or indirectly have been applied to Ontario's war effort, and some of you may be apprehensive as to the effect the closing down of war production may have on Hydro welfare.

You all know that when war was declared the Commission was in a very favourable position with regard to power supplies. We had a surplus and had contracted to purchase various blocks of power for future delivery. As the war position suddenly deteriorated with the fall of France, Canada undertook to supply immense quantities of war materials. Hydro's surplus supplies of power were soon put to use and we had to build new plants and find other means of supplying rapidly increasing loads.

By careful planning we managed each year to keep ahead of war demands as the load built up, but for the past two winters we have had to cut a few large industries for short periods on peak in order to supply the demand.

Now, as you know, we have passed the critical period. The Dominion Power Controller has lifted the restrictions in Southern Ontario and Quebec because the power demands of a few basic industries have been reduced.

Since 1942 restrictions in the use of electricity have been imposed by the Controller and voluntary conservation has been widely practiced. The total reduction in peak load, due to both mandatory and voluntary restrictions, we estimate, saved at times a maximum of 250,000 horsepower and this saving has made possible the production of much vital war equipment that otherwise could not have been manufactured.

The co-operation on the part of Hydro consumers and the municipalities in adhering to these restrictions over the past two years has, I can assure you, represented a far-reaching contribution to the part Canada is playing in the onward march to victory.

It is too early to express a definite opinion as to the amount of the net loss in load that may be experienced during the year or two following the cessation of hostilities



in Europe. Many studies have been made based upon assumptions more or less probable. However, the overall picture as the Commission views the matter is encouraging. For the period of readjustment there will, of course, be some recession in power loads, but taking a long-term view it will, I believe, not be long before the Commission will be called upon to develop new sources of power to meet growing demands for industrial and domestic requirements.

For two or three years the Commission has been operating without adequate plant standby. We have, so to speak, been holding our breath for a long time. From an operating standpoint, therefore, we will welcome a recession in load which will give us at least a 5 per cent margin of capacity.

When this margin is obtained and war loads are further reduced, the Commission can reduce the takings of purchased power arranged for on a temporary basis. Then it is also probable that the added diversion of water at Niagara Falls may be reduced.

On the other side of the ledger are certain important increases in use which will offset some of the war loads dropped.

First, many of the factories which were converted to wartime production will be reconverted to resume at the earliest possible moment their former production of peacetime commodities. As you know, there has been accumulated during the more recent war years a large backlog of consumer needs. We all know of many things we have been unable to secure or purchase during the war years and many have been saving with a view to carrying out long cherished plans as soon as materials and labour again become in normal supply. As the country returns to normal peacetime conditions, active salesmanship will be brought to bear to stimulate the demand for such consumer needs. The Hydro Commission itself has plans prepared along these lines. A large proportion of such anticipated load growth will result from the use of new electrical appliances and improved equipment in the home and further load will result from the industrial production of such goods.

#### **Production for U.N.R.R.A.**

Another factor which will tend to maintain the demand for power supplies after the war is the plan being made for Canada's participation in the United Nations Relief and Rehabilitation Administration. This programme will involve the production of vast amounts of manufactured goods and agricultural products and the fabrication of these will undoubtedly take up some of the power now employed for war production.

Having the foregoing factors and others in mind the Commission believes that its dependable power resources both generated and purchased less temporary wartime purchases would leave it with a primary surplus of perhaps, 200,000 horsepower during the winter of 1945-6. Should post-war power demands increase at a rate of approximately 60,000 horsepower per year, such a reserve would be used up in about three years. However, this takes no account of reserve capacity. In normal times a reserve of 100,000 horsepower for the Southern Ontario system is not out of the way. In fact it may be considered as the minimum for sound operating administration of the amalgamated system.

This very brief summary will show you that the Commission will be in a relatively sound position after the cessation of hostilities in Europe to continue its march of progress. During the war it has accumulated reserves to stabilize rates and I can assure you that, unless some unforeseen contingency occurs, the cost of power in Southern Ontario will continue its downward trend.

With all other commodities increasing in cost during the war years, I think it is a remarkable tribute to the Hydro enterprise that the cost of electric service has remained remarkably stable. The long history of Hydro has recorded a continual reduction in the cost of electric service and I am firmly convinced that this trend will persist.

#### **Rural Service Plans**

It may not be amiss, at this point, to refer to the Commission's plans for the extension of its rural service. As you know, the Dominion Metals Controller, during the year, further relaxed the restrictions imposed on rural extensions and the Commission was able to supply a large number of new customers—chiefly by short extensions to lines already existing, or in connection with services required to increase food production, or to serve wartime housing in rural districts. Even were all government restrictions on extensions removed immediately, some time would elapse before transmission line equipment would become available in unlimited supply. In anticipation of this condition, however, the Commission has plans for a very active extension of its rural service and looks forward to the time when throughout the length and breadth of the province, Hydro service in rural districts will be taken as much for granted as it now is in urban centres.

Almost more important, however, in the Commission's rural programme is its desire to foster increased utilization of Hydro service by farmers now supplied. Notwithstanding the satisfactory use of Hydro service made by the more progressive farmers, the Commission's records make it abundantly clear that far too many Ontario farmers use too few kilowatt-hours. Although extension of Hydro service to areas not now served will form an important part of the Commission's post-war rural planning, an equally important programme will be inaugurated to give increased service to farmers by promoting the use of such labour saving and profitable appliances as refrigerators and quick freezing equipment, electrically operated water pumping systems, improved grain grinders, water heaters and special appliances for poultry raising and similar requirements. Associated with the provision of Hydro water pumping systems, the farmers could be shown how to install a satisfactory and relatively inexpensive sanitary disposal system. There is really no technical reason why every farmer receiving Hydro service should not have in his farm home bathroom and toilet facilities every bit as satisfactory as those in city homes. It is expected that the Commission's programme for rural service will include literature of an educational character, motion pictures and display demonstrations.

Since our last meeting in Kingston, the Commission, after consultation and with the consent of the Provincial Government, has made a comprehensive revision in connection with Hydro rural service. The revised set-up was



put into effect in January, 1944. It amalgamates into one rural power district all areas formerly supplied by 120 rural power districts. It goes, however, a step further than this because it establishes for all districts a uniform rate structure with a common rate applicable to each class of rural service. Thus no matter where rural service is given in Ontario by the Hydro, the rural consumer for the same class of service and the same consumption of electricity will pay the same amount on his quarterly bill. For farm service the service charge is abolished and for hamlet residential service, is cut in half.

This rural amalgamation and unification of rates will apportion the benefits from provincial grants where they will do most good, namely, to the farmer in sparsely settled or less fertile farming districts where because of these conditions electrical service is necessarily more costly to provide. It will, therefore, be of special benefit to certain districts in Eastern Ontario. I need hardly remind you of the fact that this new programme is possible only because of the financial assistance given by the province as part of its aid to agriculture. The low uniform rural rates now in effect, as I have before pointed out, afford a challenging opportunity to the farmer himself to make more and better use of Hydro service. Nothing he can buy will give him so profitable a return on his investment.

#### Good Public Relations

The consideration of the programme for post-war rural service, in which field of operations The Hydro-Electric Power Commission itself comes in direct relationship with the consumers, brings naturally to mind the importance of what is known in utility practice as "good public relations."

I should like, therefore, to emphasize to all employees of the Provincial Commission and also to employees of the municipal utilities, the vital importance to the welfare of Hydro of the small but important matters which influence the attitude of the public towards their Hydro undertaking.

It is, for example, important that members of the utilities staffs who come in contact with the public, such as meter readers and those to whom Hydro bills are paid, should receive special training in public relationship matters. Moreover, it is suggested that frequent and cordial contacts with the public should be encouraged by those responsible for the administration of the local utilities.

We should never forget that Hydro's first duty is good service to the citizens of the province. To the individual citizen, the man to whom he pays his bills or the man who comes to read his meter is to him the representative of Hydro. Let us all strive to be good ambassadors. We are doing a good job. Let us be happy about it and make our customers feel that it is a pleasure to do business with Hydro.

There is another aspect of good public relations which is concerned not with personal contacts but with the more

subtle influences exerted on public well-being by the orderly administration and appearance of the properties which are operated as part of the Hydro equipment to serve the public. I should like to see a great improvement in this regard. I know that during the war we have had to forego usual maintenance. Our offices and stores have become shabby, but just as soon as conditions allow, we must smarten up, both physically and psychologically. We shall be facing a new era. We shall have new duties to perform and new opportunities for service. Hydro must meet the challenge and, by applying power derived from the great rivers that water this pleasant land, do what it can to create within its borders a bright new world of busy and contented people. But we shall not fully succeed unless our customers are aware and proud of our achievement.

#### Prosperity Should Be Assured

Now I want to leave this final thought with you. Many times I have stressed the importance of ample supplies of low-cost power to our national and provincial economy.

If the accumulated wealth of a country is evidence of the past productivity of its people, then its present wealth may be measured by its output per man-hour of work.

Britain and the United States became rich mainly because their workers produced more. They produced more because they had more mechanical equipment to assist them. The people of China and India are in the main poor because, even today, their labour is almost unaided by the machine. For this reason the Russian five-year plans were largely concerned with the application of mechanical equipment to production, both in urban factories and in agriculture.

The Economist of London, England, has been analyzing the origins of productivity and has found that the master key to greater productivity, is to increase the amount of power employed per worker, or expressed in a formula "horsepower per head equals wealth per head."

The Economist points out that in 1937 the total consumption of electricity in Great Britain was 414 kilowatt-hours per head; in the United States it was 771 kilowatt-hours. But how much richer Canada is where the consumption per head in 1937 was more than 2200 kilowatt-hours. The consumption in Ontario was even higher, about 2400 kilowatt-hours.

The most important way, therefore, in which an increase of productivity, and therefore wealth, can be attained is by increasing the amount of power employed per worker.

We can therefore conclude that in the Province of Ontario, where we use five times the power per head as in Great Britain, and three times the power per head as in the United States, our prosperity should be assured providing we continue to develop and put to beneficial use more power per capita than any other country.





ON THE left we have the "button boys," who gave out a name-plate button to each Quarter Century Club member present at the dinner. From left to right, W. G. Urch, J. H. McTavish, J. E. Tuck and F. S. Lear, all of Toronto.



THESE TWO squadron leaders became eligible this year for membership in the Quarter Century Club. On the left is Kenneth S. Gemmel, formerly of Markdale, and on the right is H. A. S. Molyneux, D.F.C., formerly of the electrical engineering department.

## "Shoulder to Shoulder"

PERHAPS SOME of the Quarter Century Club members will "discover" themselves in this group. On the right, W. Ross Strike, H.E.P.C. commissioner, is seen handing Miss E. G. McNichol a lucky number prize. And in the lower left, W. C. Dymond was also lucky. The cameraman was right on the job when R. C. Wilson was "prettying up" Jack Truesdale. Perhaps they were making ready for the entrance of the torch singer shown in the next photograph.





## “SHOULDER TO SHOULDER”

(Continued from page 15)

### LADIES

NAME	DEPARTMENT	LOCATION
Bassman, Helen	Accounts Pay.	Toronto
Couglin, Grace Clara	Operating	Toronto
Douglas, Mary Evaleen	Laboratory	Toronto
Fischer, Marie Josephine	Inspection	Ottawa
Martin, Gertrude Lilian	Emp. Rel.	Toronto
McCallister, Alberta	Operating	Toronto
McLaughlin, Gladys Beatrice	Inspection	Oshawa
Parsons, Alice P. C.	Municipal	Toronto
Storey, Celia	Emp. Rel.	Toronto

### MEN

NAME	DEPARTMENT	LOCATION
Adams, Roy Nicholas	Distribution	Toronto
Adamson, Frederick Byron	Operating	Seymour
Aeberli, Adolf Jakob	Hydraulic	Toronto
Archer, Fred. Abernethy	Mun. Audit	Toronto
Argo, George Gerrie	Construction	Toronto
Baldwin, Walter	Operating	Cooksville
Barrett, Harold Boyd	Accounting	Toronto
Belfry, Sherman Roy	Municipal	Cannington
Bergh, Rowland Houghton	Sales	Toronto
Black, S. W. Bruce	Hydraulic	Toronto
Bleecker, John Henry	Operating	Frankford
Bradley, Thomas Colin	Operating	Queenston
Brandon, Harry Elmer	Elec. Eng.	Toronto
Brooks, Leon McGill	Operating	London
Brown, Arthur Leslie	Operating	Campbellford
Brown, Alfred Leslie	Laboratory	Toronto
Cardie, Francis Albert	Inspection	Toronto
Carson, William	Accts. Pay.	Toronto
Chapman, Herbert Edward	Municipal	Kingsville
Clark, Charles McDonald	Operating	Niagara Falls
Clifton, Harry Kelsey	Inspection	Peterborough
Cornish, Jesse Thomas	Elec. Eng.	Toronto
Conner, Victor Lemon	Operating	Big Chute
Coyle, Frederick	Construction	Toronto
Daboll, Melvin Victor	Operating	Niagara Falls
Dafoe, Clifford Herschell	Operating	Brant
Davies, Joseph Herbert	Operating	Niagara Falls
Davies, Thomas Daniel	Inspection	Toronto
DeRue, William A.	Construction	Toronto
Dickson, Frank	Operating	Niagara Falls
Dudley, Guilford John S.	Operating	Niagara Falls
Duncan, Robert Shephard	Construction	Toronto
Dymond, William Charles	Sales	Toronto
Emerson, John Leslie	Operating	Niagara Falls
Enstone, Henry	Prod. & Ser.	Toronto
Farrell, Thomas Harold*	Municipal	Aylmer
Fierheller, Harold P.	Printing	Toronto
Flommerfelt, Cyrus Sheldon (Jr.)	Operating	Niagara Falls
Floyd, George David	Elec. Eng.	Toronto
Forgan, David	Construction	Toronto
Frampton, Arthur Herbert	Elec. Eng.	Toronto
Gaby, Dr. Robert E.	Emp. Rel.	Toronto
Gadsby, Henry Cecil	Operating	Niagara Falls
Gallagher, Gordon	Construction	Toronto
Garnett, George	Construction	Toronto
Garratt, Graham Leslie	Elec. Eng.	Toronto
Geddes, Hugh Herbert	Payroll	Toronto
Gemmel, Kenneth Shaw	Operating	Markdale
Gordon, William Ernest	Inspection	Toronto

NAME	DEPARTMENT	LOCATION
Gram, John Irwin	Operating	Niagara Falls
Gray, George Edward	Municipal	Toronto
Griffiths, George Ewart	Operating	Niagara Falls
Hadley, Arthur	Elec. Eng.	Toronto
Haslam, William Guy Albert	Operating	Niagara Falls
Hay, George Hamilton	Elec. Eng.	Toronto
Hindson, Stanley Frederick	Operating	Timmins
Hooper, George Albert	Operating	Essex
Hoyle, Radcliffe*	Operating	Waubashene
Hubbert, Sydney John	Operating	Toronto
Ianson, Floyd Hilliard	Distribution	Toronto
James, George Henry	Operating	Queenston
Johnson, Bruce Baxter	Operating	Niagara Falls
Jowett, George Albert	Operating	Niagara Falls
Kobold, A. Edwin	Elec. Eng.	Toronto
Kohnle, Otto George	Operating	Niagara Falls
Loneragan, Thomas Francis	Accts. Pay.	Toronto
Luney, Oswald Slemens	Operating	Niagara Falls
Meyers, Clarence Elmer	Operating	Belleville
Molyneux, Harold Arthur S.	Elec. Eng.	Toronto
Moore, Samuel Stanley	Operating	Niagara Falls
Morettie, Charles Edward	Operating	Niagara Falls
Motton, Charles William	Property	Toronto
Murdock, Alfred William	Municipal	Toronto
MacDonald, John Allan	Laboratory	Toronto
McKenzie, Robert Malcolm	Municipal	Toronto
McKenzie, Ernest Albert	Operating	Niagara Falls
McLellan, Clifford A.	Operating	Niagara Falls
McLeod, John William	Operating	Niagara Falls
McTavish, John	Accts. Pay.	Toronto
McWilliams, Claude Harcourt	Operating	Belleville
Neal, Robert William	Operating	Niagara Falls
Near, Frank Gerhard	Operating	Niagara Falls
Newton, David Lorne	Operating	Niagara Falls
Nielson, Alfred Emil	Operating	Niagara Falls
O'Bright, Edward	Construction	Toronto
Pedlar, Gordon Elmer	Operating	Niagara Falls
Philp, William Melville	Operating	Niagara Falls
Pirie, John Alexander	Acctg. Stores	Toronto
Pezzulli, Francesco (Peltz)	Operating	Niagara Falls
Poste, Harry Allen	Operating	Toronto
Pratt, James Franklin	Operating	Teeswater
Proctor, Ernest William	Operating	Markdale
Purvis, Edson Russell	Elec. Eng.	Toronto
Reid, William Marshall	Operating	Chatham
Rose, James Walton	Inspection	Haileybury
Rous, Harold Webster	Operating	Toronto
Sargeant, Frederick	Inspection	Kitchener
Shierlaw, George	Filing	Toronto
Smith, Harry William	Operating	Niagara Falls
Smith, William Joseph	Operating	Campbellford
Spencer, Rupert Charles	Accts. Pay.	Toronto
Statham, John	Emp. Rel.	Toronto
Stark, John Edward	Construction	Toronto
Sutherland, Alexander	Operating	Niagara Falls
Taylor, George Harold	Sales	Toronto
Taylor, William E. G.	Elec. Eng.	Toronto
Thompson, John	Admin. Bldg.	Toronto
Truesdale, John	Construction	Toronto
Walsh, Herbert Laurence	Operating	Niagara Falls
Wells, Archibald Reid	Operating	Toronto
Whitby, Alfred George	Operating	Niagara Falls
Wilson, Claude Clark	Operating	Waubashene
Whitehead, Frank Radcliffe	Inspection	Toronto
Yorke, John Edward	Operating	Niagara Falls



## L. W. PRATT PASSES

LOUIS W. PRATT, aged 67, a pioneer of the electrical industry and a member of the municipal engineering department of The Hydro-Electric Power Commission of Ontario, died recently in the Toronto General Hospital following a brief illness.



A native of London, England, Mr. Pratt came to Canada with his parents when he was a boy of twelve and was educated at Brantford where he became identified with the Brantford Electric Light Company in 1896, eventually becoming manager of that company. In 1906 he joined the staff of the Federal Electric Construction Company, Toronto, as secretary-treasurer. A year later, Mr. Pratt entered the service of the Dominion Power and Transmission Company, Hamilton and was sales manager from 1919 until 1931, when the company was acquired by the H.E.P.C. His knowledge of the D.P. and T. was invaluable when he left Hamilton to assume new responsibilities with the Commission in Toronto.

During his life, Mr. Pratt was actively identified with many professional, welfare and service organizations in Hamilton. He was chairman of the commercial section of the Canadian Electrical Association, a former secretary of the American Institute of Electrical Engineers, a director of both the Chamber of Commerce and Rotary Club of Hamilton, and a past president of the Hamilton Canadian Club.

Mr. Pratt was predeceased by his wife, the former Margaret Scott, B.A., of Brantford. Surviving are a son, John A., a daughter, Margaret, four brothers, Edward, John, Dick and George, and a sister, Mrs. George Drewry.

## T. H. FARRELL DIES

The night before he was to receive his 25-year certificate, **T. H. FARRELL**, superintendent of Aylmer R.P.D. died suddenly (on October 19) at his home in Aylmer.

He was born in Campbellford in 1893, having attended primary and secondary schools there, and later, Peterborough Business College. He was employed by the Seymour Power Company in 1910, and joined the H.E.P.C. in 1911. He went overseas in 1915, was wounded and returned to Canada in 1919. After the war, he worked as a stationary engineer with the Seaman Kent Company, rejoining the H.E.P.C. as superintendent of the Aylmer R.P.D. in 1926.

He is survived by his widow and two daughters.

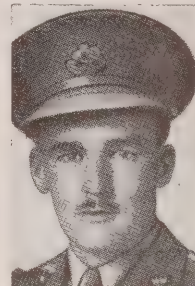
## KILLED IN ACTION

Corporal **WILLIAM W. HOLLINSWORTH** of the Argyle and Sutherland Highlanders, formerly of the H.E.P.C. electrical engineering department, has been reported killed in action. Cpl. Hollinsworth was employed as a chainman in the transmission section from 1939 until his enlistment in October, 1940.

## Hydro Man Helped Plan Rescue of Paratroopers

**LIEUTENANT RUSSELL J. KENNEDY**, R.C.E., formerly with the H.E.P.C., has been credited with a major role in the rescue of British "Red Devil" paratroopers at Arnhem, an ancient town of the Netherlands, 50 miles south-east of Amsterdam, recently. According to reports, Lieut. Kennedy helped plan the whole operation, whereby 2,500 paratroopers were taken across the lower Rhine in small boats, under heavy fire and in a driving rain.

Lieut. Kennedy graduated with honours in civil engineering from Queen's University in 1941. During his summer vacation in 1940, he joined a survey party of the H.E.P.C. property department. In May, 1941, he became associated with the Commission's hydraulic department, having been employed for a short time at head office. Later, he went to Bark Lake dam, where he remained until his enlistment in September, 1941.



## DIED OF WOUNDS

Word has been received that **CHARLES JOSEPH RIDDELL**, 2/10 Dragoons, Canadian Army, formerly of the H.E.P.C. operating department, died in England recently from wounds received when his billet was bombed. Riddell was employed at Smiths Falls in October, 1941, and at the time of his enlistment in July, 1942, was a forester at Brantford.

## BIG BUCK DROWNS

**A**FTER battling the current for more than an hour, a 200-pound buck deer was carried through the 14-foot pipe line into the Ontario Power Company's plant at Niagara Falls on October 17.

According to Game Warden Roy Muma, the big animal drowned, and, although its head and antlers were undamaged, its front quarters were badly mangled when it reached the power station. It was necessary to close down the turbine in order to remove the deer. Unsuccessful attempts were made by the game warden and Hydro employees to lasso the buck when it was in the forebay.



# HYDRO'S POST-WAR POSITION AND PLANS OUTLINED AT DISTRICT NO. 1 MEETING

**To Be In "Relatively Sound Position"—Aim At Provincial Average Of 3,000 Kilowatt-Hours Per Consumer By 1950 Through Increased Use of Electrical Appliances — Will Require Co-operation of Commission, Municipalities And Electrical Industry—George A. Findlay, Carleton Place, Elected President of District 1 — Meet at Kingston**

**H**YDRO will be in "a relatively sound position" after the war; cost of power in Southern Ontario will continue its downward trend unless some unforeseen emergency occurs; only a few municipalities now remain to join the Hydro group and therefore, the increase in the number of consumers will not be as great as in the past; Hydro's present plans call for increasing the consumer consumption of electricity to a per capita level of 3,000 kilowatt-hours between 1945 and 1950 through a co-operative effort on the part of the Commission, the municipalities and the electrical industry in promoting greater use of electrical appliances.

These points were highlights of addresses delivered at the annual convention of the Eastern Ontario Municipal Electric Association in the La Salle Hotel, Kingston, on October 7.

W. Ross Strike, retiring president of District No. 1 and now an H.E.P.C. commissioner, presided. Speakers taking part included Dr. Thomas H. Hogg, chairman of The Hydro-Electric Power Commission of Ontario; Hon. George H. Challies, the vice-chairman; R. T. Jeffery, chief municipal engineer; M. J. McHenry, director of promotion; G. F. Drewry, district engineer; Dr. R. C. Wallace, principal of Queen's University; and K. Grant Crawford, assistant professor and head of the Institute of Local Government at Queen's.

Hydro's role in the post-war period, and the importance of sound public and employee relations in building for the future were stressed by Dr. Hogg and amplified by Mr. McHenry.

## Post-war Demands

At the outset, the Hydro chairman said that it was too early to express a definite opinion as to the amount of the net loss in load that might be experienced during the year or two following the cessation of hostilities in Europe. Taking a long-term view, he believed it would not be long before the Commission would be called upon to develop new sources of power to meet growing demands for industrial and domestic requirements.

For two or three years, Dr. Hogg continued, the Commission had been carrying on without adequate plant standby. From an operating standpoint, a recession in load that would give at least a 5 per cent margin of capacity would be welcomed.

"When this margin is obtained," said Dr. Hogg, "the Commission can reduce the takings of purchased power arranged for on a temporary basis. Then it is also probable that the added diversion of water at Niagara Falls may be reduced."

On the other side of the ledger, he pointed out, were certain important increases which would offset some of the war loads that would be dropped. Many factories that converted to war-time production would be reconverted for the production of peacetime goods.

Another factor which, he said, would tend to maintain the demand for power supplies after the war would be the plan for Canada's participation in the United Nations Relief and Rehabilitation Administration.

## Increased Service to Farmers

Proceeding, Dr. Hogg said that although extension of Hydro service to areas not now served would form an important part of the Commission's post-war rural planning, an equally important programme would be inaugurated to give increased service to farmers by promoting the use of such labour-saving and profitable appliances as refrigerators and quick freezing equipment, electrically operated water pumping systems, improved grain grinders, water heaters and special appliances for poultry raising and similar requirements.

"In consideration of the programme for post-war rural service, in which field of operations the Commission itself comes in direct relationship with the consumers, brings to mind the importance of good public relations," said Dr. Hogg.

"I should like, therefore, to emphasize to all employees of the Provincial Commission and also to employees of the municipal utilities the vital importance to the welfare of Hydro of the small but important matters which influence the attitude of the public towards their Hydro undertaking."

It was important, Dr. Hogg emphasized, that members of utilities' staffs who came in contact with the public, such as meter readers, and those to whom Hydro bills were paid, should receive special training in public relationship matters.

At the close of his address, the Hydro chairman stressed the importance of ample supplies of low-cost power to the national and provincial economy.

"The Economist of London, England, has been analyzing the origins of productivity and has found that the master key may be expressed in a formula 'horsepower per head = wealth per head'," he continued.

The Economist, he pointed out, had noted that in 1937 the total consumption of electricity in Great Britain was 414 kilowatt-hours per head and in the United States it was 771 kilowatt-hours; but in Canada, Dr. Hogg stated,

*(Continued on page 22)*



THESE ARE a few camera impressions of the District No. 1 meeting of the O.M.E.A. held in the LaSalle Hotel in Kingston, on October 6.



C. C. FOLGER, general manager and secretary of the Public Utilities Commission, Kingston, was in the centre of a discussion when this picture, left, was taken.





## DISTRICT NO. 1 MEETING

*(Continued from page 20)*

it was 2,200 kilowatt-hours, and Ontario alone had an average of 2,400 kilowatt-hours.

"We can, therefore, conclude," remarked Dr. Hogg, "that in the Province of Ontario, where we use five times the power per head as in Great Britain, and three times the power per head as in the United States, our prosperity should be assured providing we continue to develop and use more power per capita than any other country."

In "Looking Ahead," Mr. McHenry predicted that if the progress of the war were as satisfactory in the next few months as it had been during the past six months, they could confidently look forward to a need for renewed promotion in 1945.

Reviewing the record of the past twenty years in order to "establish probabilities of the future," he cited interesting figures on kilowatt-hours sold for residential use in the urban centres of Ontario. From 1924 to 1934 this figure rose from 293,000,000 to 798,000,000, or an increase of 505,000,000 kilowatt-hours, and in that period 96 municipalities were added to the Hydro group, while the number of domestic consumers increased by 160,000. From 1934 until 1943, continued Mr. McHenry, the increase in kilowatt-hour consumption was 469,000,000, 23 new municipalities were served and the number of consumers was increased by 106,000.

"From 1924 to 1934," he stated, "we went through a period of prosperity followed by severe depression. During the second ten years, we were well out of this depression, only to be plunged into war. Therefore, the two periods are not entirely dissimilar. Further, it should be noted that the rate at which new municipalities were being added has been steadily declining, and there now remains only a small number of municipalities to be added to the Hydro group. Therefore, during the next six years—until 1950—it cannot be expected that the number of consumers will increase at as high a rate as it has in the past."

The speaker pointed out that a great proportion of any increase would come by population increase, either by natural growth or by immigration. It was estimated that no more than 70,000 new consumers would be added in the next six years and the load expected from these customers would be approximately 70,000,000 kilowatt-hours per year.

### Must Seek New Loads

Such an increase, continued Mr. McHenry, would not even serve to maintain domestic consumption at its present average level and, consequently, other loads had to be sought.

In looking ahead, he went on, it was apparent that progress could be attained only by an ever-increasing use of electrical appliances by residential Hydro consumers. An objective to raise the average annual consumer use to a level of 3,000 kilowatt-hours in 1950, he believed, was not too much to expect. To reach such an average figure would require in 1950 an added domestic consumption of Hydro in Ontario as a whole of 655,000,000 kilowatt-hours. Of that amount, approximately 585,000,000 had to be

obtained by increasing the use of electric energy in existing consumers' premises.

Estimates showed, proceeded Mr. McHenry, that it would be necessary to install appliances from 1945 until 1950 at the following rate each year: electric ranges, 18,000; electric irons, 13,000; electric toasters, 33,000; electric water heaters, 20,000; electric refrigerators, 25,000; electric washers, 25,000. This would require the installation of electric ranges and water heaters in only 3 per cent of the homes of Hydro consumers each year, and refrigerators and washers in 4 per cent, he stated.

Prospects for additional use of commercial power in industry could not be completely estimated and itemized. At this time, he said, several industries in the United States were investigating the possibility of locating plants in Ontario, and every effort was being made to encourage manufacturers in Great Britain.

The programme, Mr. McHenry emphasized, would require the co-operation of all Hydro municipalities and the Commission, as well as co-operation with other branches of the electrical industry, such as manufacturers, distributors and dealers.

### Must Earn Rights

Professor K. Grant Crawford of Queen's University, who spoke at the luncheon, deplored the tendency on the part of both individuals and municipalities to turn to governments for help. To be entitled to their rights, they had to be prepared to meet their obligations, he declared.

"Municipalities," he continued, "have to earn their rights to represent their people in the same way as you people of Hydro earned your right to be given consideration in the larger picture by reason of the work you did at the start."

Professor Crawford recalled that when "these first municipalities felt they had something for the people in the use of electricity," they had got together instead of running to Toronto. Because Hydro had started in that way it had been established on a firm foundation. It had meant a lot of hard work, trial and error and careful planning. "You have today," he said, "a tremendous structure in the Province of Ontario. It has done so much for the expansion and development of our province and the industries of our province."

Continuing, the speaker urged that more problems be faced and solved at "the municipal level" where the people could appreciate what was being done.

"If we are going to operate a democratic system of government we must arouse public interest, and we must have men and women, like yourselves, to take part in public leadership," he declared.

Officers of District No. 1, O.M.E.A. elected for the ensuing year are as follows: president, George A. Findlay, Carleton Place; first vice-president, Frank Plant, Ottawa; second vice-president, Thomas Andre, Kingston; secretary-treasurer, M. W. Rogers, Carleton Place; District representatives: Gordon S. Matthews, Peterborough; J. G. Baldwin, Lindsay; and Bert Tully, Picton; O.M.E.A. executive representatives: Morley Duff, Belleville, and James Halliday, Kingston.





**S**UMMER APPETITES may have been "tired," but with the coming of Autumn we find a new zest for enjoying life, doing things and for eating. Apathy gives way to appetite. So, let each day's menu be satisfying, nourishing and eye-appealing.

A few ideas for dishes are: hot potato salad; scalloped liver and potatoes; French fried onions; old-fashioned bean soup; barbecued short ribs; veal pot pie; spiced green tomatoes; buttermilk muffins; mock mincemeat pie; and Dutch apple cake. (Recipes will be supplied upon request).

\* \* \* \*

Odds and ends! Try slicing grapefruit in thin crescent-shaped pieces with the skin left on, just as you'd cut watermelon. A dish of these slices will save time on a busy morning. There is no extra waste and the sections are easy to eat.

\* \* \* \*

It's a good idea to use the coarse blade of your grater to slice the apples for pie. You will save at least one-third the time required to do the job by hand.

\* \* \* \*

When a crowd of week-enders come to our house, I provide towels and wash cloths for each person on clothes hangers. A wire hanger makes a good clothes line for travellers who wash their socks or stockings on their journey.

\* \* \* \*

Here's an easy way to mend a leak in a hot water bottle: Cover the leak with clear nail polish, then patch with adhesive tape; apply a coat of nail polish to the adhesive tape. Let dry thoroughly and apply one more coat of polish. The patch will last for many months.

A handy gadget for a kitchen drawer is made by bending the tines of a fork at right angles about a half inch from the ends. Use the fork to remove pickles and olives from their jars.

\* \* \* \*

One try doesn't make a cook, neither does a cookbook. Taste as you go. Salt is the first and most important of seasonings, and don't forget it in sweet dishes.

\* \* \* \*

A pinch of powdered cloves in a cream filling for a chocolate cake is one of those surprising flavours that you shouldn't resist.

\* \* \* \*

Try a squeeze—or better yet, a slice of lemon in all clear soups and jellied ones too.

Equal parts of hot chocolate and heated left-over coffee with a dash of cinnamon is tops these cooler days.

\* \* \* \*

Beat half a cup of cream into a mould of coffee jelly; dust with sugar and serve with almond-flavoured cream.

\* \* \* \*

The taste for apples is whetted by their mild aroma and the satisfaction of good munching. However, the various ways in which apples can be used are numerous. They can be served often if you watch the proportions of sugar.

Nowadays we don't buy apples by the barrel—at least most of us don't. Our recent purchase of a basket of Duchess apples and our quota of one pound of sugar has been used as an experiment to discover what could be done with them. It was found that a family of six could have five different desserts which used every apple and one pound of sugar. Of course, there was no guess work in the sugar measurements, and we found the foods were sweet enough.

Applesauce was made from six apples cut up and cooked in one cup of water, then put through a sieve to remove skins and cores. Three tablespoons of sugar were then added. (We believe that all stewed fruits fresh or dried should be flavoured with sugar after cooking, but while they are still hot.)

Apple pie was not overlooked. It took nine apples and two-thirds of a cup of sugar. By the way, we grated a little cheese over the apples before we put on the top crust.

Apple dumplings are on a par with pie as to popularity. Six apples were peeled and cored. These cavities were filled with sugar—it took four tablespoons. A square of plain biscuit dough was then folded around each, dampening the edges to seal in the juices. They were steamed over boiling water for 50 minutes and served with a diluted honey syrup.

Apple crisp is really a delicious dessert although it requires a little more sugar. Eight apples were sliced into a buttered casserole and covered with the following ingredients that were crumbled together:  $\frac{3}{4}$  cup white sugar;  $\frac{3}{4}$  cup flour, 3 tbsps. hard butter;  $\frac{1}{2}$  tsp. mace and  $\frac{1}{2}$  tsp. cloves. A half cup of water should be poured down the side and the pudding should be baked in an electric oven 350 degrees for 30 minutes.

There were then two apples and two tablespoons of sugar left and these were used to make a Dutch apple cake. The method used for the cake was: measure and mix 2 cups flour, 3 tps. baking powder and  $\frac{1}{2}$  tsp. salt. Cut in  $\frac{1}{4}$  cup butter; stir in  $\frac{2}{3}$  cup milk and a beaten egg. Spread the mixture in a shallow greased pan. Peel and slice apples and place in rows on dough. Sprinkle top with 2 tbsp. sugar and  $\frac{1}{4}$  tsp. allspice. Bake in electric oven at 400 degrees for 25 minutes. Serve with milk.

Other receipts will also help to consume the Canadian fall apples which are not suitable for storage or export. These varieties are Duchess, Alexander, Wolf River, St. Lawrence and Wealthy.





# HARNESSING HORSEPOWER

*THIS is the second in a series of articles which will outline, step-by-step, the work involved in the building of a power plant from the time a site is selected until the electricity is available in homes and factories that may be located hundreds of miles away.—The Editor.*

THIS ILLUSTRATION shows a prospective power site on the Aguasabon river.

By **JAMES MACKINTOSH**  
Hydraulic Department, H.E.P.C.

THERE is a close philological link between Greece, whose people are now being liberated and The Hydro-Electric Power Commission of Ontario. This is to be found in the fact that the words "Hydro" and "hydraulic" spring from the Greek root word "hydōr" meaning "water." While incidental, it is an interesting fact to note in a series of articles discussing, from start to finish, the building of a plant where Hydro power is generated.

Water is a natural resource which abounds in Ontario, where there are many great rivers and water falls that can be harnessed for the benefit of the people. Even prior to the establishment of the Commission in 1906, it was recognized that while the province was lacking in coal and oil resources, it had this abundance of water which could be utilized to meet power requirements for many years to come.

Let us at this point consider the natural water cycle or, as it is sometimes known, the hydrological cycle. Starting with the precipitation of rain or snow as it falls on the earth, this water may be disposed of in several ways. Some will be evaporated, returning to the atmosphere, some will sink into the ground, some will run off into the water courses. The surface run-off proceeds on its way by stream, river and lake to the sea. That portion which sinks into the ground may be used to support plant life, and thus be dissipated through transpiration, or it may sink down to form part of

the underground water reservoir which is present under practically all parts of the earth's surface. It is this ground-water that feeds the springs and wells and supplies in large measure the flows in the streams in periods of reduced precipitation and in winter, as well as providing the source of moisture for the support of plant life, probably the most important of all its functions.

In due course the water in the streams reaches lake or sea, and is evaporated and falls again to the earth and so the cycle is completed.

Of the several factors affecting changes in the regimen of water supply, the change in forest area is one of the most important. Forest cover by shade and by the absorptive blanket of the forest floor retains the snow and rain, giving it a greater opportunity to sink into the ground and replenish ground water supplies, or allows it to run off at a slower rate than it would from the exposed earth surface.

In considering the question of water in relation to the generation of electricity, it is generally known that hydraulic power is obtainable when water falls, under control, from a higher to a lower level. The greater the difference in levels and the larger the flow of water, the greater is the power available. In this country the head, or fall, is usually expressed in feet, and the flow of water is usually given in terms of cubic feet of water per second, or cfs. Horsepower is a multiple of head and flow; that is, one cfs enters into the equation as much as one foot of head. It is apparent, therefore, that a suitable head and a continuous supply of water are equally significant. With a head equal to 100 feet, 200 cfs will give twice the power given



by 100 cfs, and, with a stream flow of 100 cfs, 200 foot-head will give twice the power given in a 100 foot-head.

### Affect of Glaciers

Geologists tell us that the most ancient of rocks underlie much of Canada; that its topography, size and nature of its water-ways and its scenery are in a large measure the result of the advance and retreat of the glaciers, which, in recent geological times covered much of the country. The topography of the Dominion and its underlying geological formations are vital factors in the determination of its water powers. Their effects on precipitation, on formation of lakes and rivers, and on the gradient of these water-ways are basic elements of our power resources.

Due to the progressive tilting of the surface of the earth, these beds of rock in Ontario appear to be like shingles of a roof and slope generally in a southerly direction. Rocks, therefore, that would occur some thousands of feet below the surface, were the beds lying horizontally, are found progressively on the surface when traversed in a northerly direction. The tops of these tilted deposits were eventually sheared off by the advance and retreat of the pre-historic glaciers.

The lowest beds of rock encountered in Ontario are of a granitic character, and are termed "pre-Cambrian." Lying on top of this are limestone measures, which in turn are overlain with sand and grit-stone and finally topped by glacial and alluvial gravel, sand and clay overburden.

The pre-Cambrian or granitic rocks are found on the surface north and northwest of a zone approximately stretching between Kingston on the St. Lawrence and Port Severn on Georgian Bay. Limestones, sandstones and gravels are found to predominate in the outcrops as one travels generally in a southerly direction south of the pre-Cambrian area. The zone of contact between the granites and the limestones is by no means as narrow as the above explanation might indicate, for it can be more likened to

the fingers of clasped hands, as fingers of granite and limestone are found occurring for considerable distances respectively south and north of the general zone of contact.

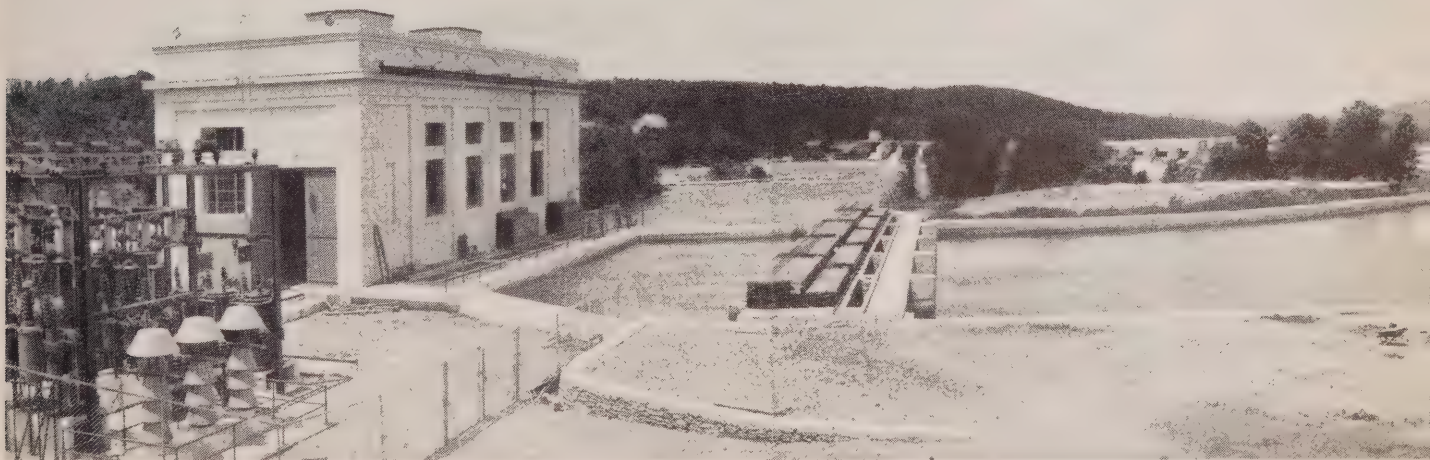
We find that the effect of these pre-historic influences has been to grind down the roof of Ontario, and that little of it is more than twelve hundred feet above the sea level. This is indicated by some of the water levels maintained in the operation of water storages in Ontario. For example, Belwood lake on the Grand river, elevation 1394; Lake Simcoe elevation 716; Opeongo lake in Algonquin Park, elevation 1322; Lake Temagami, elevation 942; Abitibi lake, elevation 877; Long lake, on the Long Lac diversion project, elevation 1027; Mojikit lake, on the Ogoki diversion scheme, elevation 1073; Lac Seul, on the English river, elevation 1170; and Lake St. Joseph on the Albany river, elevation 1226.

Overlying the surface of considerable areas of the pre-Cambrian shield in Ontario are masses of glacial gravels and sands remaining after the final retreat of the glaciers. These masses sometimes appear freakish, as they frequently stand some hundreds of feet above the surrounding plain. These deposits are the source of the necessary concrete aggregate required in the construction of works throughout the area in question.

The topography of the pre-Cambrian shield with its granitic rocks is decidedly rough and this results in rivers with steep gradients and many falls and offers excellent opportunities for the development of power. The zone of inter-lacing between the pre-Cambrian shield and the limestone areas also gives opportunities for good dam sites and concentrations of head. This is due to dikes of granitic rocks piercing the upper limestone beds. This geological combination has helped to maintain falls and rapids, which if otherwise formed of limestone alone, would probably have resulted in sluggish rivers or flat rapids. These physical features are illustrated by the accompanying sketches and pictures of this article.

*(Continued on next page)*

THIS SMALL 5,000 horsepower development, known as Dam No. 9, is located on the Trent river which is a typical Southern Ontario waterway in that its fall is gradual. In the right background of this illustration is a dam built to serve navigation and power development. This structure backs up the water to the intake of the power house.







MADE AVAILABLE through the courtesy of the Ontario Department of Mines, this map is designed to show the surface geology of Ontario.

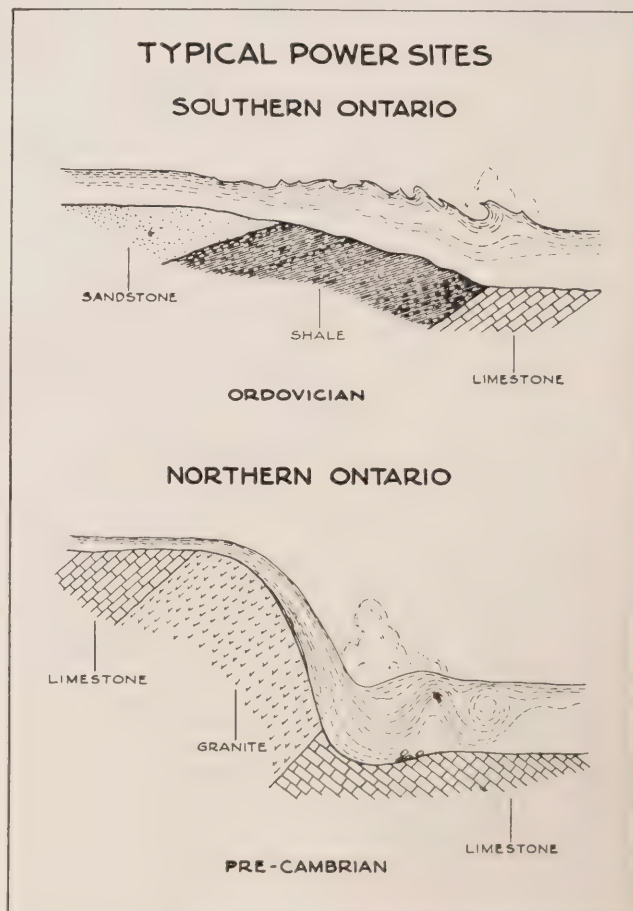
In the southerly areas of limestone and those areas covered with deep masses of overburden, little opportunity occurs for the development of power. The exception is, of course, along the upper St. Lawrence and the Niagara rivers and some of their immediate tributary streams. Fortuitous combinations of hard limestone, over-topping beds of comparatively soft limestone and shales, form the Niagara gorge and the escarpment generally running behind Dundas and Hamilton. Whereas little erosion is apparent on the pre-Cambrian power sites, and those sites on the inter-lacing zone, considerable erosion is taking place at Niagara Falls by the action of water. Readers are aware of the steps that already have been taken, and are likely to be taken in the future, to arrest this erosion.

## Factors Which Influence Run-Off

The river flow available for power depends primarily upon the size of the drainage area above the power site and upon the precipitation. It also depends upon the nature of the vegetative cover and the soil, the proportion of lake area and other factors. These several factors influence the distribution of the total run-off throughout the year, and determine its natural regularity. If the water supply from the watershed is very irregular, from period to period, due to physical features that encourage the rapid run-off from rain storms, storage basins frequently have to be constructed to smooth out this irregularity in supply. Fortunately it is found that in the pre-Cambrian shield there are large lake areas which in the aggregate not infrequently amount to some 15 per cent of the total watershed area, also large swamp areas, and these not only provide a measure of natural regulation to the stream flow, but offer opportunities for the creation of artificial storage.

Unfortunately the power assets of the province, obtainable from power sites in the pre-Cambrian shield and adjoining zones, with their advantages of natural regulation, are offset somewhat by the natural decrease in precipitation, which is found to occur as one progresses in a northerly direction. In southwestern Ontario the normal precipitation is about 34 inches. This amount of precipitation is decreased to some 32 inches between Lake Ontario and the Ottawa river. There is a band of relatively high precipitation, amounting to some 36 inches, extending along an area bordering the easterly shore of Lake Huron. The precipitation is about 30 inches throughout the eastern parts of Northern Ontario and decreases progressively to some 22 inches, as one moves west to the Manitoba boundary.

As above indicated, the height of land dividing the Hudson Bay drainage from the Great Lakes drainage in Ontario is relatively flat, notwithstanding that it is about 1,200 feet above sea level. As one travels west along the Canadian National Railway lines between Sudbury and Sioux Lookout, one finds that rivers draining in a southerly direction to Lake Superior are paralleled by rivers draining in a northerly direction into Hudson Bay. This generally flat character of the terrain, with the inter-locking drainage areas, has been taken advantage of by the Commission in diverting 1,500 square miles of the Kenogami river and 5,500 square miles of the Ogoki river, both tributaries of the Albany river, into Lake Superior.





# ANNOUNCEMENTS ON HYDRO POLICY DISCUSSED AT DISTRICT 5 MEETING

**Endorse Motion That O.M.E.A. Approve Such  
Announcements—Superintendents And Man-  
agers To Be Permitted To Partici-  
pate In District No. 5 Proceed-  
ings—To Revise Constitution**

**D**ISCUSSIONS on Hydro policy should be announced by the Commission only after consultation with its engineers and with the approval of the Ontario Municipal Electric Association. This, in brief, was the substance of a motion endorsed at the O.M.E.A. District No. 5 meeting held at Brantford on October 4.

Dr. W. J. Chapman of St. Catharines, who sponsored the motion, which was seconded by A. W. Bradt of Hamilton, charged that, from time to time, announcements concerning Hydro policy had been made by political speakers and, in his opinion, Hydro should be kept out of politics.

After considerable discussion, the following motion was carried: "That we reaffirm our stand that matters pertaining to Hydro policy should be made only by The Hydro-Electric Power Commission of Ontario, after consultation with its engineers and approval of the Ontario Municipal Electric Association, and that copies of this resolution be sent to the Ontario Municipal Electric Association and to the district associations of the O.M.E.A. throughout the province."

Another resolution passed at the afternoon session, presided over by Roy Pierson of Brantford Township, was to the effect that the superintendents and managers of the various local commissions of O.M.E.A. District No. 5, be entitled to take part in the discussions and vote at all meetings in this district.



C. A. WATEROUS (left) and R. Welsh of Brantford were no doubt "ironing out" a knotty problem with Hon. George H. Challies when this picture was taken.

The delegates also approved appointment of a committee by the president to revise the constitution of O.M.E.A. District No. 5.

Mr. Pierson indicated that plans were being discussed for the inauguration of a central training school for superintendents. This would mean, according to the president, that if a municipality had a potential superintendent, he would have the privilege of attending this school.

W. Ross Strike, H.E.P.C. commissioner, in his remarks on this subject, said that this movement was just in the



THIS ILLUSTRATION was taken at the evening dinner when the head table guests were giving their rendition of "Home On The Range." From left to right, Osborne Mitchell, W. Ross Strike, Roy Pierson, Hon. George H. Challies, Gordon D. Campbell and R. T. Jeffery.





THIS GROUP, taken at the evening banquet, includes George Austin, P. B. Yates, W. R. Catton, C. A. Waterous, R. Welsh and G. D. Campbell.

embryonic stage and that there was nothing about it on paper as yet. It was recognized, that as managers of the local utilities had to handle all kinds of conditions and meet the public, that these men required some training in public relations. How that could be accomplished, he stated, had to be determined.

In a brief address, R. T. Jeffery, chief municipal engineer of the H.E.P.C., pointed out that, "Our forefathers made this country a better place in which to live and that is what the builders of Hydro had in mind when they formulated Hydro's constitutions. They want to leave behind them something for the good and benefit of this country. The Hydro system is not going to stay static, and we are helping to make this country a better place in which to live."

Discussing Post-war Utilization of Power, M. J. McHenry, director of promotion, H.E.P.C., pointed out that Hydro's progress had to be maintained and growth stimu-

lated in order they could all do their part in the development of this province. "This," he continued, "is a public system and we are the trustees of it. It is up to us to see that, on the one hand, the public receives the information and attention it should get, and that, on the other hand, the public support its own system."

The evening dinner speakers included Hon. George H. Challies, vice-chairman, and W. Ross Strike, H.E.P.C. commissioners.

All officers of District No. 5 O.M.E.A. were re-elected for the ensuing year. They are as follows: president, Roy Pierson, Brantford Township; first vice-president, Richard Thomson, Paris; second vice-president, S. J. Wilson, Beamsville; directors: Fred Barraclough, Beamsville; Keith MacLeod, Stamford Township; mayor Robert Hunter, Dundas; M. J. Conally, Cayuga; auditors: Carl D. Hanniwell, Niagara Falls, mayor John P. McCammon, Paris; secretary, George Austin, Dundas.

THIS PICTURE was taken when the afternoon business session was in full swing. Included in the group are: Kathleen Ciceri, R. J. Jeffery, H. D. Rothwell, F. H. May, J. H. Caster, Dr. W. J. Chapman and Garnet Edwards.





# WOULD HAVE HYDRO CONSUMERS SIGN STANDARD CREDIT CARD

**J. C. Cooke Of Windsor Outlines Suggestion At  
Meeting Of The Accounting And Office  
Administration Section Of The A.M.E.U.**

A STANDARD credit card which would be filled out by the consumer when signing his contract for Hydro service was suggested by J. C. Cooke of Windsor, at the meeting of the Accounting and Office Administration Section of the A.M.E.U. at its meeting in London on October 19.

"Such a card would give the consumer's name and the address in the community from which he had come," Mr. Cooke explained.

Continuing, he said that if, after the card had been sent to the municipality in which the customer had previously resided, it was found that an account was still owing then the customer could be asked either to pay the outstanding account or make a guarantee deposit large enough to take care of any future bills. "This method would eliminate a great deal of the correspondence necessary at present," he said.

Outlining the work of the delinquent account collection service which had been set up since the last meeting, F. A. Archer, of the H.E.P.C. municipal accounting department, stated that, for the most part, there had been splendid co-operation on the part of the municipalities.



DISCUSSING OLD times were M. A. Gough (left) East York and Dr. W. J. Stevenson, London.

He said, however, that some of the accounts which had been sent in were many years old and should have been written off. Other municipalities, he said, had not attempted to contact either the consumer or the municipality although they knew the community to which the delinquent customer had moved. "Had a more aggressive policy been adopted by these municipalities, I believe, some of these accounts could have been collected without the intervention of the Commission," Mr. Archer declared.

HEAD TABLE guests at the A.M.E.U. meeting were D. J. McAuley, H.E.P.C.; R. S. Reynolds, Chatham; A. W. Bradt, Hamilton; J. B. Hay, London; W. E. Wallace, Windsor; A. B. Manson, Stratford; P. B. Yates, St. Catharines; George Appleton, Toronto, and Leo Cain.





BELOW IS a general view of the luncheon meeting of the A.M.E.U. at London.



THE DELEGATES from Stratford were talking to C. E. Hodgson of the H.E.P.C. when this photograph was taken.

INCLUDED IN the group above is H. F. Parker, Woodstock; J. E. Teckoe, Jr., Galt; James Hammond, Hamilton; H. C. Robinson, Dundas, and H. T. MacDonald, H.E.P.C.



He said that 853 accounts had been sent in, and 487 of these consumers had moved to unknown addresses. There remained 289 accounts of which it had been impossible to find any trace, and 77 accounts had been collected resulting in \$358 being returned to the municipalities.

"The Windsor Public Utilities received 20 accounts for collection," J. C. Cooke told the delegates. "Nine were not on our lines and from the others we collected \$95."

Continuing, Mr. Cooke said that he thought that accounts sent to other municipalities for collection should not be for more than two billing periods, that it should be sent within six months, and that a municipality should be allowed a commission of 10 per cent to cover the cost of

making the collection.

The luncheon meeting was presided over by W. E. Wallace of Windsor, while H. F. Parker of Woodstock, was chairman of the business session, during which, George Appleton, Toronto, gave a paper on Depreciation Accounts, while Leo Cain, of the Sangamo Electric Company, and J. E. Teckoe, Jr., of Galt, discussed Billing of Demand Consumers. D. J. McAuley of the H.E.P.C. staff, presented a paper on Accounts Distribution.

Delegates to the meeting stood while two minutes' silence was observed in memory of S. R. A. Clement and John Stewart Watt, two A.M.E.U. members who passed away recently.

## NORTH LAND IS EL DORADO TO ABITIBI SUPERINTENDENT

**A**NGUS CARLTON FERGUSON, superintendent of the Commission's development at Abitibi Canyon, is a man who has "absorbed the optimism of the North, especially with regard to the future of Northern Ontario."

Slim in stature and keen of eye, this quiet, friendly man is both scholarly and practical. He is a good listener and, when he speaks, he is deliberate.

When interviewed by Hydro News in his office at the power plant, his observations revealed that he retains the refreshing outlook of the young man who discovers his material and spiritual El Dorado in Ontario's North Country.

"Mining? It's only at its beginning," he smiled. "There will be a large expansion—immediately after the war—as soon as materials and labour become available. I think gold will be the principal metal to be mined in Northern Ontario."

There is one matter concerning which Mr. Ferguson is inclined to be pessimistic, however, and that is the out-

look for agriculture in the North. While there were vast areas that could be utilized for the production of forest products, it was not a country which was ideally suited to agriculture because of uncertain climatic conditions, he stated, pointing out that there were late frosts in the spring and early frosts in the fall.

Born and educated at Gravenhurst, Ontario, Mr. Ferguson has had extensive experience in the building trades, steam fitting, surveying and in the electrical field. He joined the staff of the Commission twenty-six years ago and served under the late D. M. Johnston who was construction engineer at that time. He became foreman of electrical installation, and then erection engineer before being transferred to the operating department and to Abitibi Canyon in 1933 as plant superintendent. In 1935, Mr. Ferguson was called upon to take over the additional duties of district superintendent at Abitibi where his son, Carl B. Ferguson, is a first operator.

Mr. Ferguson and his wife, Margaret, occupy house No. 3 in the Colony. His daughter, Vivian, is in the Wrens.

In his spare time, he can usually be found in his hobby corner in the basement of his home where he has very fine equipment for wood and metal work. Mr. Ferguson has made many beautiful lamps, desks and beds.



## CANYON COLONY

(Continued from page 10)

stenographers, F. L. Cattarello, M. M. Doucette and I. V. Wright; postal clerk, Mrs. Dorothy Frampton; housekeeper, Mrs. Betty Hughes; domestic service helper, Mrs. Y. Mulligan; retail storekeeper, G. H. Cooper; chief operator, S. L. Bull; first operators, C. B. Ferguson, J. L. Penney, J. R. Grant and J. L. Cox; second operators, W. G. Brooks, W. Sinclair and J. E. Sparling; floormen, G. L. Crandlemire and J. S. Rennick; operators-in-training, S. H. Beamish, T. B. Millet and M. P. Godfrey; plant janitor, L. Williams; electrician foreman, J. E. Daley; electricians, J. C. R. Purdon, H. F. Henning, H. D. Christian and W. J. Alford; machinist, N. J. Wright; fitter, W. L. Legris; utility, E. A. Reise and R. C. Byers; utility foreman, C. F. Wade; utility men, J. E. LeBlanc, H. T. Mulligan, H. Wischee and T. W. Iserhoff; caretaker, J. Reise; resident nurse, Dorothy Chapman, R.N.; school teachers, Hazel Chalmers, principal, and Gwendolyn Roach.

To the visitor, whose tempo of life is attuned to the hustle and bustle of a big city where he is one of thousands dashing and scrambling into crowded street cars in the morning and at night, and where he has to move and stop according to traffic lights, Abitibi's 19½ acres are a little piece of paradise. At this Hydro colony the pace of traffic is set by pedestrians, kiddy cars and perambulators. True, there is one old car at Abitibi—possibly as a reminder to the children that there are really such conveyances in the world!

The most delightful memories one carries away from this northern outpost of Hydro, however, are associated with its people. The warmth of the welcome they extend to the newcomer, and their unbounded hospitality have to be experienced to be fully understood.

In leaving this little colony, one cannot but retain the impression that its people are, in a sense, modern pioneers whose lives are not only dedicated to the service of Hydro but to the building of a greater Canada, and that their example is one which can make the world of tomorrow a better place in which to live.

## KNOCKS OUT GERMAN "88"

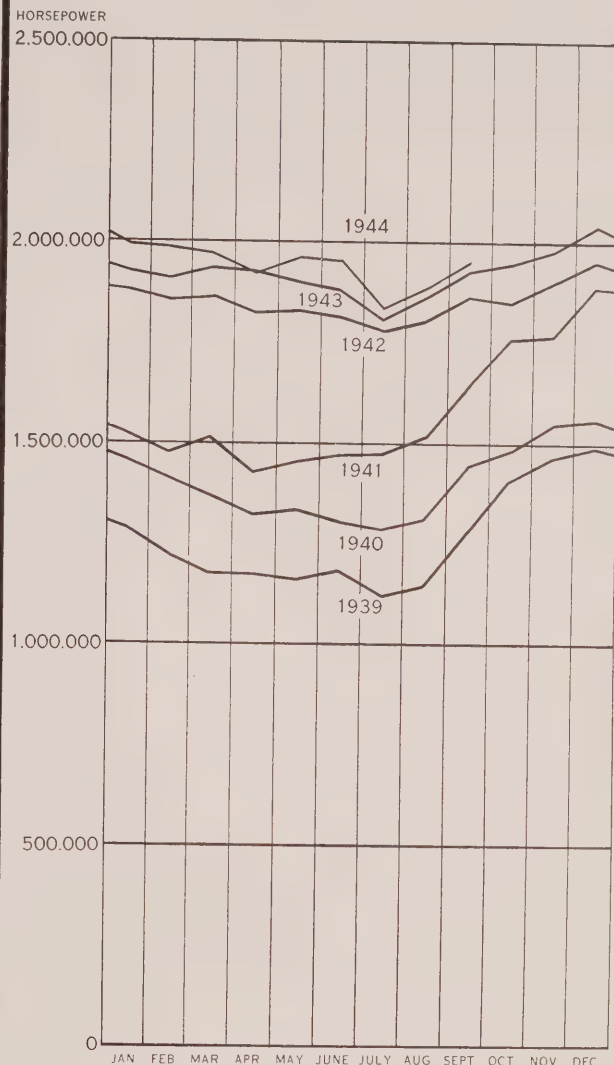
**"J**N the case of the Canadian Grenadier Guards, when you mention the crossing of the Ghent Canal at Moerbrugge and the outflanking of the German position at Bruges, the men of Grenadiers will speak of Lieut. J. A. S. Milne of Toronto," writes Allan Kent, war correspondent of The Toronto Evening Telegram.

Archie Milne, who was formerly with the Commission's hydraulic department, was in the lead tank of a reconnoitring squadron, according to Kent. As it rounded a bend in the road, the tank met a burst from a deadly "88" which broke the steering mechanism. Rolling along at full speed, it pitched into a ditch and lay angled on its side.

Instead of abandoning the tank, Milne had his gunner traverse the gun in the direction of the flash of the enemy weapon. Although the tank was hit again, the gun was swung about and fired, knocking out the German "88."

## SOUTHERN ONTARIO SYSTEM EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

### PRIMARY LOAD



### PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	SEPTEMBER, 1944	SEPTEMBER, 1943	
SOUTHERN ONTARIO SYSTEM...	1,952,122	1,916,562	+ 1.9
THUNDER BAY SYSTEM .....	116,756	101,233	+ 15.3
NORTHERN ONTARIO PROPERTIES	187,285	189,675	- 1.3
TOTAL .....	2,256,163	2,207,470	+ 2.2

### PRIMARY AND SECONDARY LOADS

SOUTHERN ONTARIO SYSTEM...	2,059,160	1,942,084	+ 6.0
THUNDER BAY SYSTEM .....	123,995	121,635	+ 1.9
NORTHERN ONTARIO PROPERTIES	244,380	249,192	- 1.9
TOTAL .....	2,427,535	2,312,911	+ 5.0



# MUNICIPAL LOADS, AUGUST, 1944

## SOUTHERN ONTARIO SYSTEM

NIAGARA DIVISION  
(25-Cycle)

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Acton	1,674	1,903	Erieau	262	218	Oil Springs	174	541
Agincourt	219	P.V.	Erie Beach	40	21	Otterville	114	P.V.
Ailsa Craig	156	487	Essex	636	1,886			
Alvinston	100	649	Etobicoke Twp.	7,838	V.A.	Palmerston	590	1,400
Amherstburg	1,041	2,704	Exeter	731	1,654	Paris	1,833	4,604
Ancaster Twp.	450	V.A.	Fergus	1,344	2,759	Parkhill	241	1,029
Arkona	62	403	Fonthill	204	860	Petrolia	936	2,768
Aurora	1,411	2,821	Forest	579	1,562	Plattsville	137	P.V.
Aylmer	863	1,985	Forest Hill	5,609	12,172	Point Edward	1,776	1,199
Ayr	282	760	Galt	11,144	15,126	Port Colborne	1,402	6,928
			Georgetown	1,910	2,452	Port Credit	889	1,934
Baden	545	P.V.	Glencoe	190	763	Port Dalhousie	1,187	1,599
Beachville	791	P.V.	Goderich	1,828	4,674	Port Dover	638	1,790
Beamsville	463	1,227	Granton	72	P.V.	Port Rowan	95	700
Bell's River	197	836	Grimsby	958	1,988	Port Stanley	1,234	824
Blenheim	452	1,873	Guelph	11,747	23,074	Preston	4,152	6,656
Blyth	169	662				Princeton	156	P.V.
Bolton	238	629	Hagersville	1,078	1,524			
Bothwell	113	683	Hamilton	154,101	164,719	Queenston	169	P.V.
Brampton	2,724	6,157	Harriston	530	1,292			
Brantford	21,818	31,622	Harrow	697	1,092	Richmond Hill	534	1,295
Brantford Twp.	1,204	V.A.	Hensall	185	686	Ridgetown	583	1,986
Bridgeport	140	P.V.	Hespeler	2,816	2,938	Riverside	1,117	5,235
Brigden	88	P.V.	Highgate	86	322	Rockwood	148	P.V.
Brussels	144	784	Humberstone	562	2,831	Rodney	120	758
Burford	283	P.V.	Ingersoll	3,629	5,757			
Burgessville	51	P.V.	Jarvis	186	513	St. Catharines	27,977	34,541
Burlington	1,619	3,925	Kingsville	520	2,453	St. Clair Beach	120	138
Burlington Beach	492	1,474	Kitchener	26,217	35,465	St. George	188	P.V.
						St. Jacobs	355	P.V.
Caledonia	302	1,430	Lambeth	118	P.V.	St. Marys	1,791	4,009
Campbellville	40	P.V.	LaSalle	286	907	St. Thomas	7,634	17,045
Cayuga	108	700	Leamington	2,386	6,048	Sarnia	10,906	18,599
Chatham	6,512	17,184	Listowel	1,583	2,984	Scarborough Twp.	4,977	V.A.
Chippawa	312	1,228	London	39,653	77,105	Seaforth	1,044	1,782
Clifford	107	491	London Twp.	456	V.A.	Simcoe	2,957	6,340
Clinton	752	1,879	Long Branch	1,259	4,258	Smithville	183	P.V.
Comber	134	P.V.	Lucan	204	643	Springfield	71	382
Cottam	70	P.V.	Lynden	113	P.V.	Stamford Twp.	3,150	8,275
Courtright	46	355	Markham	401	1,175	Stoney Creek	237	933
			Merlin	70	P.V.	Stouffville	401	1,198
Dashwood	121	P.V.	Merritton	11,099	2,916	Stratford	7,624	17,163
Delaware	75	P.V.	Milton	1,517	1,915	Strathroy	1,638	2,834
Delhi	388	2,430	Milverton	423	994	Streetsville	238	701
Dorchester	91	P.V.	Mimico	2,591	8,785	Sutton	527	949
Drayton	149	528	Mitchell	755	1,670	Swansea	2,563	6,907
Dresden	479	1,525	Moorefield	46	P.V.			
Drumbo	116	P.V.	Mount Brydges	95	P.V.	Tavistock	727	1,080
Dublin	53	P.V.				Tecumseh	537	2,391
Dundas	3,171	5,245	Newbury	25	288	Thamesford	248	P.V.
Dunnville	1,424	3,916	New Hamburg	639	1,441	Thamesville	172	816
Dutton	245	830	Newmarket	1,862	3,800	Thedford	148	598
			New Toronto	11,619	9,469	Thorndale	97	P.V.
East York Twp.	8,377	41,578	Niagara Falls	10,136	20,371	Thorold	2,427	5,284
Elmira	1,421	2,069	Niagara-on-the-Lake	1,179	1,764	Tilbury	1,507	1,923
Elora	491	1,185	North York Twp.	9,568	V.A.	Tillsonburg	1,499	4,602
Embro	168	420	Norwich	431	1,301	Toronto	334,593	657,612
						Toronto Twp.	3,764	V.A.

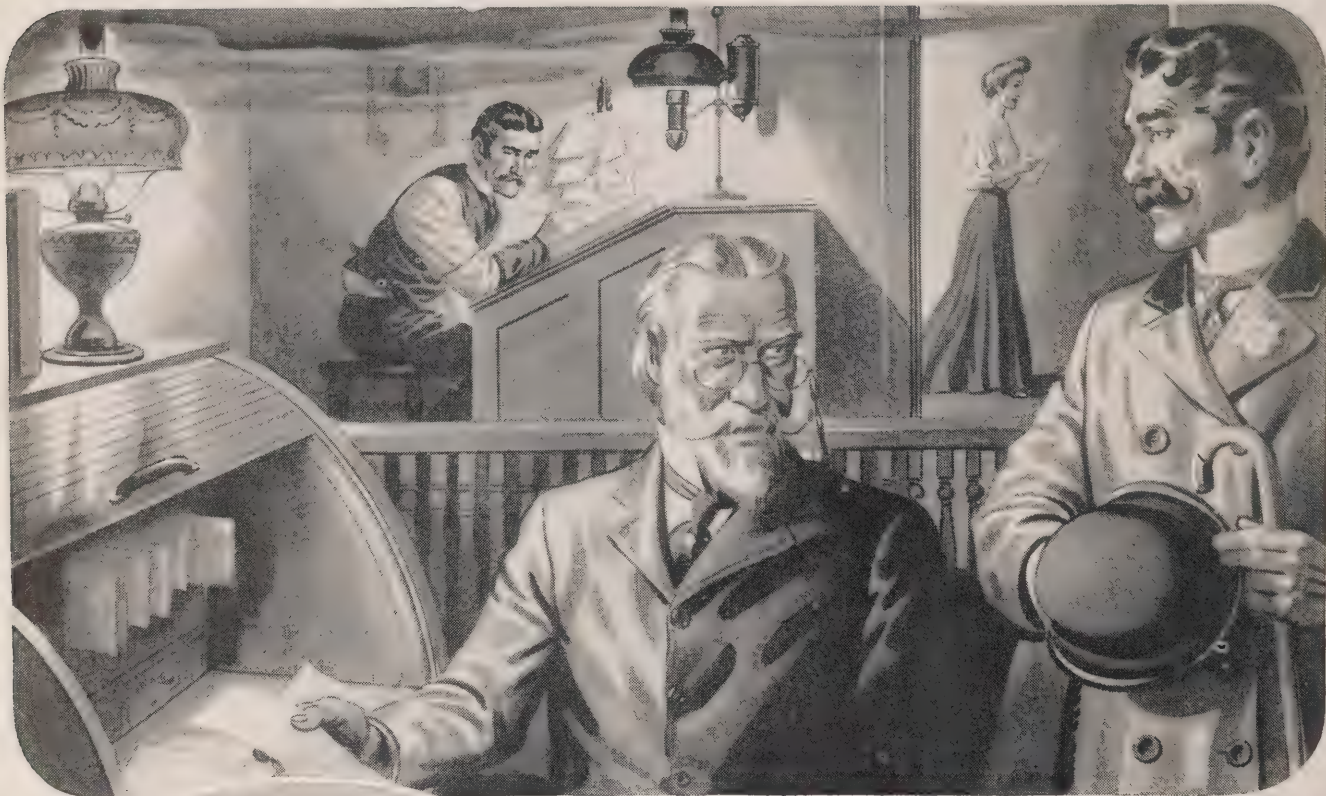


# MUNICIPAL LOADS, AUGUST, 1944

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Wallaceburg -----	4,127	4,802	Neustadt -----	44	431	Lakefield -----	493	1,301
Wardsville -----	38	221	Orangeville -----	734	2,558	Lanark -----	89	686
Waterdown -----	285	867	Owen Sound -----	5,628	13,559	Lancaster -----	41	570
Waterford -----	469	1,294	Paisley -----	111	530	Lindsay -----	3,668	8,345
Waterloo -----	6,005	8,968	Penetanguishene -----	1,051	4,177	Madoc -----	222	1,130
Watford -----	410	1,023	Port Carling -----	301	520	Marmara -----	146	1,004
Welland -----	11,792	14,899	Port Elgin -----	667	1,415	Martintown -----	44	P.V.
Wellesley -----	148	P.V.	Port McNicoll -----	115	950	Maxville -----	106	811
West Lorne -----	220	768	Port Perry -----	364	1,175	Millbrook -----	88	749
Wellesley -----	148	P.V.	Priceville -----	10	P.V.	Morrisburg -----	308	1,484
Weston -----	4,644	6,333	Ripley -----	111	420	Napanee -----	1,431	3,241
Wheatley -----	202	761	Rosseau -----	27	305	Newcastle -----	176	701
Windsor -----	49,464	118,040	Shelburne -----	252	1,053	Norwood -----	162	710
Woodbridge -----	669	1,110	Southampton -----	784	1,467	Omemme -----	209	630
Woodstock -----	8,345	12,339	Stayner -----	301	1,106	Orono -----	95	P.V.
Wyoming -----	67	538	Sunderland -----	88	P.V.	Oshawa -----	17,152	26,610
York Twp. -----	18,718	77,175	Tara -----	144	510	Ottawa -----	32,704	150,816
Zurich -----	150	P.V.	Teeswater -----	173	973	Perth -----	1,827	4,187
(66 2/3 Cycle)			Thornton -----	41	P.V.	Peterborough -----	11,718	24,977
Bronte -----	193	P.V.	Tottenham -----	105	532	Pictou -----	1,268	3,400
Oakville -----	1,354	3,369	Uxbridge -----	370	1,480	Port Hope -----	2,592	4,997
Trafalgar Twp. -----	638	V.A.	Victoria Harbour -----	112	979	Prescott -----	1,577	3,318
GEORGIAN BAY DIVISION			Walkerton -----	1,065	2,534	Richmond -----	73	428
(60-Cycle)			Waubaushe -----	184	P.V.	Russell -----	78	P.V.
Alliston -----	414	1,700	Warton -----	326	1,750	Smiths Falls -----	2,989	7,741
Arthur -----	154	1,089	Windermere -----	110	117	Stirling -----	330	947
Bala -----	330	355	Wingham -----	866	2,149	Trenton -----	5,112	8,183
Barrie -----	4,046	9,559	Woodville -----	68	439	Tweed -----	290	1,181
Beaverton -----	318	941	EASTERN ONTARIO DIVISION			Warkworth -----	88	P.V.
Beeton -----	143	617	(60-Cycle)			Wellington -----	393	948
Bradford -----	225	1,041	Alexandria -----	248	1,976	Westport -----	110	725
Brechin -----	55	P.V.	Apple Hill -----	50	P.V.	Whitby -----	1,551	4,236
Cannington -----	256	761	Arnprior -----	1,311	4,019	Williamsburg -----	92	P.V.
Chatsworth -----	101	333	Athens -----	124	626	Winchester -----	395	1,017
Chesley -----	650	1,812	Bath -----	58	325	THUNDER BAY SYSTEM		
Coldwater -----	224	545	Belleville -----	7,555	15,498	(60-Cycle)		
Collingwood -----	3,041	6,249	Bloomfield -----	150	636	Fort William -----	14,089	30,370
Cookstown -----	107	P.V.	Bowmanville -----	2,565	3,850	Nipigon Twp. -----	192	V.A.
Creemore -----	161	661	Brighton -----	486	1,462	Port Arthur -----	22,752	24,217
Dundalk -----	269	686	Brockville -----	4,959	11,112	NORTHERN ONTARIO		
Durham -----	580	1,874	Cardinal -----	422	1,602	PROPERTIES		
Elmvale -----	160	P.V.	Carleton Place -----	2,002	4,143	Nipissing District		
Elmwood -----	71	P.V.	Chesterville -----	328	1,094	(60-Cycle)		
Flesherton -----	61	452	Cobden -----	125	643	North Bay -----	4,436	16,013
Grand Valley -----	182	645	Cobourg -----	2,282	5,907	Patricia District		
Gravenhurst -----	1,174	2,261	Colborne -----	226	960	(60-Cycle)		
Hanover -----	1,438	3,190	Deseronto -----	276	1,002	Sioux Lookout -----	288	1,967
Holstein -----	21	P.V.	Finch -----	108	396	Sulbury District		
Huntsville -----	1,310	2,943	Frankford -----	176	1,095	(60-Cycle)		
Kincardine -----	866	2,483	Hastings -----	135	823	Capreol -----	251	1,660
Kirkfield -----	27	P.V.	Havelock -----	139	1,103	Sudbury -----	10,235	36,724
Lucknow -----	418	856	Iroquois -----	271	1,123			
MacTier -----	123	V.A.	Kempville -----	359	1,230			
Markdale -----	207	776	Kingston -----	14,752	29,545			
Meaford -----	790	2,759						
Meaford -----	790	2,759						
Midland -----	4,769	6,754						
Mildmay -----	163	764						
Mount Forest -----	574	1,936						



# HYDRO *Lightens* The Way!



## They Wouldn't Have Believed It!

● If anyone had told the office managers of the early nineties that in a few years, as time goes, electrically powered machines would do, in seconds, the work that took hours of toil, they wouldn't have believed it.

Yes, electricity has certainly lightened the way in this streamlined age. In the city or on the farm we rely on it for light, for heat, for power, for comfort. It lightens our burdens, dispels darkness and increases our pleasures. The men who supply Hydro to our homes—have made it so dependable, so economical that it is an accepted part of our daily life.

Yet, so great and varied are the possible services of electricity that the benefits we have so far accepted represent little more than the most obvious uses. It would be rash indeed to attempt to foretell or limit the future applications of electric power. In planning for tomorrow, take full advantage of the benefits that electricity and electrical equipment can bring to everyone.



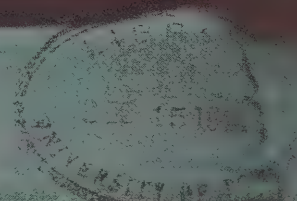
The need is greater now  
**BE A BLOOD DONOR!**

Inquire at your nearest  
Red Cross Clinic

**THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO**



# HYDRO *News*



DREAMY DREAMLAND





## *Out of the Darkness*

One by one, the lights of the world are coming on again, shining through the darkness of the night with a warm glow of comfort and cheer. Out of the gloom of war, lights are appearing as bright symbols of a new hope . . . a hope born of an assurance of victory.

Two thousand years ago the Star of Bethlehem proclaimed the birth of Christ and gave new hope to the world . . . so the lights return to us now as heralds of Peace . . . a Peace that comes out of sacrifice and suffering and gives promise of a new and better life.

May this Christmas awaken in our hearts new faith and strength to continue to fight for those things we hold dear . . . to do our part to hasten the day when the lights in every country again shine brightly and throughout the world will reign the Spirit of "Peace on Earth, Goodwill to Men".

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO





## THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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### The Front Cover



IN going to press with this year's Christmas issue of Hydro News, we cannot refrain from saying that we are rather proud of our cover reproduction entitled "Dreamy Dreamland." As we see it, this picture is symbolic of a theme which will strike a responsive chord in the hearts of children and grown-ups alike at this season. For a special story on the cover turn to page 20.

Volume 31

December, 1944

Number 12

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# Christmas Thoughts

Once again we unite in observing Christmas and in recalling the story of Bethlehem. As we do so, we remember the very vital part we, as Hydro folk, are privileged to play in hastening the day when the spirit of this season may find expression in the lives of men and nations throughout the world.

We also remember with pride the high achievements of our gallant fighting men, and the magnificent contribution of the workers on the home front. As we remember those to whom the war has brought tragic loss during the past year, we are deeply conscious of the grave responsibility which must be assumed by all free people in shaping the future destiny of the world.

These thoughts will be in our minds as we pause at this time to join with our fellow Canadians in rededicating ourselves to our respective tasks in the days ahead.

To all members of our great Hydro family--wherever they may be--go my sincere wishes for their happiness at Christmas, and the hope that the New Year may open up to us all a wider horizon of happiness and opportunity in a world at peace.

*J. H. Noyes*





## \* Page Three \*

### HYDRO'S CHEMICAL LAB

**I**N the day-to-day operations of an efficiently co-ordinated organization such as Hydro, highly skilled engineers and technicians are engaged in a wide diversity of interesting and important duties, each of which has its place in maintaining the character and standard of the service provided.

It would be no exaggeration to state that within the walls of the Commission's well-equipped laboratory are to be found many of the most interesting activities associated with the operation of Hydro.

In this issue of Hydro News, the article, "In the Balance," directs attention to the work of the chemical laboratory where thousands of tests are conducted every year.

It is possible that the layman might not at once fully appreciate the role of such a lab in providing him with low-cost Hydro power which is available at a touch of the switch. Reference to two tests alone, however, would serve to emphasize the value of this work. In the case of oil, which is used in transformers, Hydro laboratory technicians have developed a process of reclamation which has resulted in oil being maintained in service for many years.

And again, through a series of tests, it is possible to determine exactly the rate of deterioration of any kind of paint before it is used.

These and many other interesting facts mentioned in the article reflect the vital part played by one department in the efficient maintenance of Hydro service throughout the province.

### CHRISTMAS

**A**T this season there is a discernible change in the conduct of the human family. People who usually enter their homes in a normal manner, now manifest a tendency to approach these same homes in a way that is suggestive of stealth. They will mutter to themselves, if a hinge creaks as they open the front door, and then they will pause to listen intently. Some manage to enter so silently that only their shadows betray their presence. On such occasions, however, it may be noted that the shadows cast are unusually bulky!

Inside the house, there is much tip-toeing, whispering and holding of breath along with the occasional rustle of paper and the cautious opening of dark cupboards and hid-

den trunks. Mystery seems to abound on every hand with every member of the family striving to maintain innocent, Sphinx-like expressions.

But, eventually, the suspense is over. The many excellent reasons for these hush-hush tactics are revealed in the form of beautifully wrapped packages beside the gaily decorated tree on Christmas morning.

The practice of giving at Christmas is one which brings happiness to both the giver and the receiver. It is a practice which should not be forgotten immediately Christmas is over. Giving can mean something which cannot always be appraised in the terms of hard cash.

Many fighting men have given their lives that we may be able to observe this Christmas according to our traditional customs. And so, as we give and receive on this, the sixth wartime Christmas, we should also remember.

### WORTHY OF SUPPORT

**A**LL who have had a part in directing the activities of the Horticultural Section of the Ontario Hydro-Electric Club since its inception on June 13, 1938, have reason to be proud of the club's record.

The officers of this group have been untiring in their efforts to bring the most reliable information on the growing of flowers and vegetables to Hydro gardeners throughout the province. Many lectures, given by eminent authorities, have been arranged by the club along with the various shows conducted during the year. In all, some 700 awards have been presented at these shows to date. After 1940, prizes took the form of war savings stamps and certificates instead of medals and ribbons which had been given prior to that time.

In 1943, the club, whose present membership is close to 500, launched its province-wide campaign to enlist Hydro victory gardeners who, in the past two years, have produced vegetable crops valued at over \$45,000. In addition, the club has donated hundreds of dollars to the Red Cross, the Seeds for Britain Fund and other war activities.

Such an organization is worthy of the support of all Hydro employees who can take part.

It won't be long before the new seed catalogues are available!



ON THE right is shown a cross section of the H.E.P.C. chemical laboratory. Lower left, C. H. Clark was engaged in determining the British Thermal Units (B.T.U.) of coal when the photographer snapped this one.



# In the BALANCE

**U**NLIKE the alchemists of the Middle Ages, chemists and technicians in the H.E.P.C. chemical laboratory, are not seeking "the philosopher's stone." Rather, they are applying the methods of chemistry to the solution of the many day-to-day problems that are closely linked with the onward march of Hydro in Ontario.

Every year in this laboratory thousands of tests are conducted. Some are simple and require only a few minutes to complete; some are complicated and take hours; and there are others which may take months to complete. Then there are the tests, at present on the "secret list," which are being carried out at the request of Canada's Armed Services and whose results, even now, may be contributing to Allied victories on the Western Front.

These and other interesting facts were obtained recently, when Hydro News visited this realm of beakers, bottles, burettes and balances. T. H. Chisholm head of

Hydro's chemical laboratory, answered our many questions, and explained the work of his section.

The science of chemistry, or alchemy as it was originally called, was probably started in Egypt about the third century. It was first applied to the manipulation of base metals to form alloys that would simulate gold and silver, which in turn were used in the manufacture of imitation jewellery.

In the early part of the sixteenth century, a new direction was given to alchemy, when Paracelsus, a physician's son, pointed out that chemistry's true object was not the making of gold, but the preparation of medicines. Thus iatrochemistry came into being. While the word was at first associated with medicine, a later definition linked it with the analysis of substances. Now chemistry has come to include not only analysis, such as the breakdown

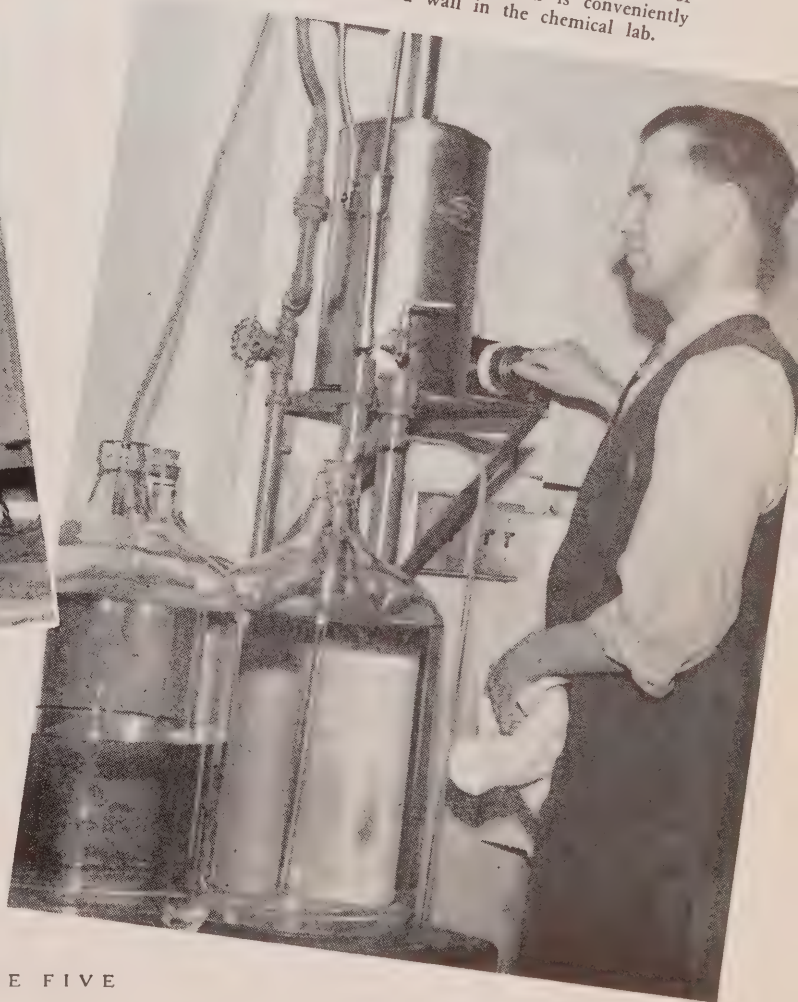
*(Continued on page 6)*



THE LEFT illustration shows a weatherometer which is used for determining the rate of deterioration of paints, varnishes and other organic materials when exposed to atmospheric conditions. On the right, Barney Kellam is seen arranging a tube of lubricating oil in a constant temperature bath.



THINGS REALLY get hot (above) when put in this high temperature furnace, which has a maximum capacity of 1000 degrees Centigrade.



BELOW, V. J. CATLING turns the switch of the standard water still, which is conveniently mounted on a wall in the chemical lab.



(Continued from page 4)

of materials into their elements, but synthesis, the reverse process by which many scarce natural products can now be produced in unlimited quantity and hitherto unknown materials, such as the sulphur drugs and the plastics, have been developed to the great benefit of man.

So far as Hydro is concerned the chemical laboratory seeks to determine the quality of materials used in widespread operations, to obtain information as to the causes of unsatisfactory service and to assist in research into new materials and methods.

An example of the first is the testing of protective coatings such as paint, and roofing plastics. For the quick valuation of such organic protective coatings, a weatherometer is extensively used. This equipment subjects the paint or plastic to light from a special arc lamp which simulates the sun's rays. Periodically, the test panel comes in contact with a spray of cold water which serves the dual purpose of wetting and cooling the specimen. The test

offers valuable information on the probable performance which a paint will give in service. Those found satisfactory are approved for use in the Commission's work.

An example of the second function is the testing of water used in cooling transformers to determine what treatments are necessary to retard the formation of scale deposits in the cooling system or the growth of algae in storage ponds. Or, it may be that the water, in the form of spray, is forming deposits on nearby insulators, and methods have to be devised for their easy removal.

Probably the most interesting stories of the work of the chemical laboratory as told to Hydro News by Mr. Chisholm, were of its research activities. He showed us an experimental refrigerator in which about 1,000 pounds of food could be stored at temperatures of as low as minus 10 degrees Fahrenheit.

We saw one of the laboratory technicians determining the power factor and interfacial tension of used insulating

(Continued on page 27)

T. H. CHISHOLM head of the chemical section of the H.E.P.C. laboratories watches V. J. Catling perform a titration which is a common test in quantitative analysis.





# HELP FIGHT FLAMES, MOVE FURNITURE AS FIRE RAZES BUILDINGS AT RAMORE

**M. D. Kaye, Superintendent Of Connaught R.P.D. And His Men Rush To Scene—Maintain Electric Service As Long As Possible To Aid Home Occupants Move Belongings — Save One Dwelling — Remain On Job 18 Hours To Restore Hydro Service To Area**

**S**PEEDING to a serious outbreak of fire which destroyed all but three buildings in a block at Ramore, during the night of November 21, four Hydro men not only maintained electric service in the area as long as possible, but they helped fight the flames, saved one home from destruction and assisted in the moving of furniture.

The men, M. D. Kaye, superintendent of Connaught Rural Power District, Steve Brotherston, and Clifford Bailey, linemen, and William Hough, lineman's helper, were on the job for eighteen hours without let-up.

Had there been any wind, it is feared that the whole town might have been wiped out. As it was, damage is estimated at between \$75,000 and \$100,000, the only buildings in the block to escape destruction being the Commercial Hotel and the homes of J. Gordon and Louis Laforge.

The latter dwelling was saved as a result of the efforts of Mr. Kaye and his men who hung Hydro blankets over the rear of the building and kept them wet while the conflagration was raging in the adjacent structures.

The fact that the fire occurred during the night added to the difficulties of the people in the burning block. The Hydro men co-operated in maintaining electric service to the last minute in order that as many belongings as possible

could be removed from the homes. In addition to patrolling high tension lines in the area and keeping spectators at a safe distance, Mr. Kaye and his men used their truck to haul large square timbers, pianos and other pieces of furniture from homes, while Mr. Kaye himself, accompanied by the manager of the Ramore Hotel, inspected all rooms in the burning building, to see that everyone had vacated the premises.

Working at top speed the Hydro men also removed meters from two of the buildings which were finally destroyed.

First intimation of the fire was received by Mr. Kaye a few minutes before 2 o'clock in the morning on November 21. Within half an hour he and his men had covered the fifteen miles between the R.P.D. headquarters at Matheson and Ramore, which is a small town some 65 miles south of Cochrane.

In addition to gutting the best part of a block, the fire destroyed two Hydro poles, electric service equipment and wires, cutting off the service to a number of consumers in the area. By staying on the job and hiring five men to assist in digging and in general repair work, the Hydro men restored service in the area the following evening, finally returning to Matheson after a hectic eighteen hours at the scene of the fire.

VISITING THE scene of the Ramore fire the following day, a photographer recorded this camera impression of a part of the block which was practically gutted. Arrow indicates the home which was saved through the efforts of Hydro men of Connaught Rural Power District. The left inset shows M. D. KAYE, superintendent of the district, and the right inset is that of S. J. BROTHERSON, a lineman.





# SAYS HYDRO TO PLAY MAJOR ROLE IN BUILDING TOMORROW'S CANADA

**W. Ross Strike Stresses Commission's Achievements In Peace And War—Speaks At District No. 4, O.M.E.A. Meeting**

**H**YDRO, which has a proud record of achievement in both peace and war, is destined to play a leading role in helping build the greater Canada of tomorrow.

This, in brief was the keynote of the message brought by W. Ross Strike, H.E.P.C. commissioner, when speaking at the meeting of District No. 4, O.M.E.A. in the King Edward Hotel, Toronto, on November 3.

The speaker, who was accorded a rousing ovation, declared that Hydro was the greatest single factor for raising the standard of living in the province. Because of that, he continued, they had to protect it and give leadership. In this connection, Mr. Strike stressed the need for

co-operation, not only with the Government, but with the municipalities.

"I want to remind you," he proceeded, "that in spite of going through a war that has, in most instances, completely distorted the picture from an industrial, manpower and economic point of view, the picture has been distorted very little in so far as Hydro in the province of Ontario is concerned. We have been able to meet every demand for power without throwing our general structure out of gear. And our product has not been affected in any way. In fact, in spite of having been engaged in war, the cost has gone down, and this does not apply in any other field."

## In Fortunate Position

"Hydro," he continued, "is in the fortunate position at the present time of being able to meet all war demands, and there will be very little distortion in the power picture



HEAD TABLE guests in the upper picture are, from left to right, Kathleen Ciceri, Osborne Mitchell, K. A. Christie, K.C., W. Ross Strike and John A. Leslie. In the lower picture, left to right, are: R. T. Jeffery, A. G. Jennings, F. H. May, John Irwin, Roy Pierson and J. J. Jeffery.



after the war is over. There may be a momentary lapse while industry is re-tooling, but that interval will be so short, insofar as our power demands are concerned, that it will be negligible. Hydro is in a splendid position to meet post-war conditions."

Mr. Strike emphasized the importance of public relations and suggested that the municipalities reach their customers through an educational system, which, he stated, could best be accomplished through the children. He declared that plans along these lines were already under way, and commended the system that was in operation at Belleville. This, in brief, the speaker pointed out, was a method whereby one of the utilities' salesmen taught the students in the public and high schools how to read meters and bills, and who explained how power was obtained



JAMES WICKIAM of East York Township Hydro-Electric Commission is shown in the act of singing a rousing number as he acted as choral leader.

through the distribution station, and in a great many instances enabled those people to become thoroughly conversant with Hydro.

### Services In Rural Areas

In his address on Post-War Planning and Reconstruction, R. T. Jeffery, chief municipal engineer of The Hydro-Electric Power Commission of Ontario, said that rural power was big business. During the last year, he stated, the Commission had approved 18,127 rural services and had supplied about 9,700 of them.

He said that during that time, over 300 miles of rural line had been built, and that rural contracts were coming in at the rate of between 200 and 300 a week, so that by the end of next year there would probably be another 12,000 to 15,000 contracts, in addition to those now receiving attention.

"Another post-war problem is the matter of poles," continued Mr. Jeffery. "We now have 750,000 poles con-



A CROSS-SECTION of the gathering is shown here with E. R. Lawler, H.E.P.C.; R. H. Philip, Trafalgar Twp. Area No. 1; E. M. Ashworth and M. J. McTavish of Toronto Hydro in the foreground.

structed in our rural lines. Municipalities have at least another 500,000 poles. The average life of a pole in Ontario is between 15 and 20 years, and thousands of poles now in use are over the 'age limit.' Orders have been placed for 70,000 poles, and only about 20,000 were received. We have recently placed an order for 95,000 poles and don't expect to get any more than one-third of them."

"It is estimated," he added, "that Hydro's requirements for the next two years will be 100,000 poles and I don't know where they are going to come from, as it takes years to grow cedar poles and lumber is being cut at an enormous rate and is not being replaced."

Speaking in behalf of the delegates, Albert G. Jennings, secretary of O.M.E.A. District No. 4, and chairman of East York Township Hydro-Electric Commission, thanked the guest speakers. John A. Leslie, president of District No. 4, O.M.E.A., and chairman of the Scarborough Public Utilities Commission, presided.



CAUGHT IN animated discussion during the meeting were: left to right, K. A. Christie, K.C. Toronto; and A. G. Jennings and Jack Warren of East York Township.



# MEMBERS OF CHINESE COMMISSION SEE QUEENSTON-CHIPPAWA PLANT

**Gather Data In Canada And The United States  
To Assist China Develop Her Natural Re-  
sources — Are Guests Of Hydro  
At Dinner In Toronto**

A VISIT to Hydro was included in the itinerary of the Chinese National Resources Commission whose members, comprising twenty eminent technical men and economists appointed by the Chinese government, visited Toronto recently and later inspected the H.E.P.C. Queenston-Chippawa at Niagara Falls.

The visiting party is at present making a tour of the North American Continent investigating methods and gathering data which will enable them to make recommendations and plans for the development of China's natural resources along the most efficient and economical lines. At the same time, the visitors are surveying sources of supply in connection with necessary machinery and equipment for the projected programme of development in China.

During their stay in Toronto, they were the dinner guests of the H.E.P.C. on November 14, when they met the Commission and the heads of various Commission departments. Hon. Charles Daley, minister of labour for Ontario, as chairman of the Niagara Falls Park Commission extended an invitation in behalf of that body to the Chinese who were the luncheon guests of that Commission at Niagara Falls on November 18.

At the Hydro dinner, addresses were delivered by Dr. Hogg, Hon. George H. Challies and commissioner W. Ross Strike, while C. Yun, who is in charge of the visiting party, and H. Huang replied. The former is general manager of the Central Electrical Manufacturing Works, while Mr. Huang is director of the National Hydro-Electric Power Survey.

Both the guest speakers gave an interesting picture of the hydro-power development possibilities in China. They revealed that extensive developments could be undertaken in the Southwestern part of China. One site on the Yangtze River alone, it was stated, has a potential capacity which is more than ten times that of Hydro's present Niagara



PHOTOGRAPHS ON this page were taken at the Queenston-Chippawa plant upon the occasion of the recent visit of members of the Chinese National Resources Commission to Niagara Falls where they inspected the H.E.P.C. development.

development. From the standpoint of mineral deposits, all basic metals have been discovered in China with the exception of nickel and chromium. It was also revealed that a large deposit of bauxite had been found.

While at Niagara Falls, the members of the visiting commission inspected Hydro's Queenston-Chippawa development and, at the close of the inspection, T. P. Yang remarked to a Hydro official: "You people have not only built a large, well-engineered generating station here, but you have treated it, architecturally and decoratively, in a very pleasing manner."

The Chinese visitors were accompanied by R. G. Peers, advisor to the National Resources Commission.







THIS SECTION of the head table at the Horticultural Club's dinner brought together, from left to right, Victor Butt, vice-president; Mrs. Butt; J. J. Traill, president; William Lang, guest speaker; A. B. Hayman, past president; and Mrs. Hayman.

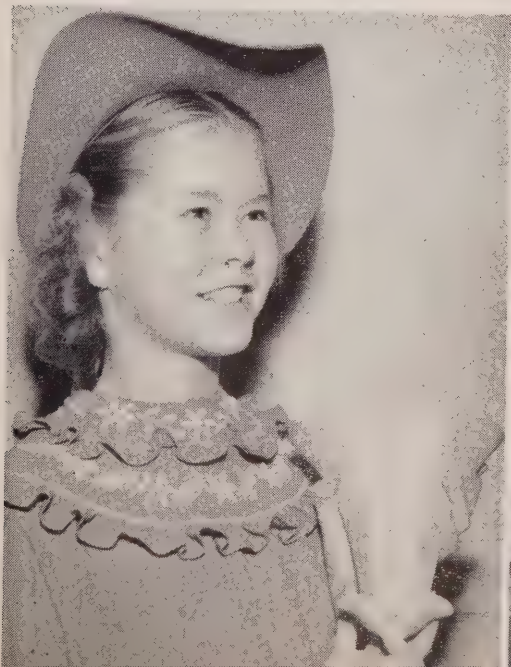


SITTING HERE are, from left to right, Mrs. H. R. Hill, Captain Adam Smith, director; Mrs. R. H. Starr, Mrs. Adam Smith, William Carr, director; Mrs. Carr and H. R. Hill, secretary.



MEMBERS OF this group were quite chummy when the photographer came upon them. They are, left to right, A. H. Sharpe, director; Elizabeth Grader; Jack MacLaren and Mrs. MacLaren.

IT WAS a delightful photo finish to cameraman Al. Walker's assignment when he got this charming little lady in his view finder. She is Dily's Whatley, the winner of the lucky draw prize which she is holding. Bottom reproduction shows a general view of the gathering.



## BIG FISH SHOW UP AT CLUB'S DINNER

SOME of the big fish that allegedly got away from Hydro anglers showed up at Central Y.M.C.A. on November 3, when members of the Ontario Hydro-Electric Horticultural Club met for the annual fall dinner.

In addition to superb specimens of bass, trout and muskies, the colour film screened by Bill Lang, the guest speaker, brought to life the natural beauty of Canadian forests, streams and lakes. Made by Mr. Lang, who is a sportsman, photographer, lecturer and author, the film, "Along the King's Highway," presented many interesting close-ups of deer, bear and moose, discovered in a trip from Niagara to Fort Frances.

Because it was based upon first-hand knowledge and experience, the speaker's address, supplementing the film, was unusually interesting and enlightening.

During the evening, awards were presented to winners in the various shows held during the year.

Officers elected for the ensuing year are: president, J. J. Traill; vice-president, Victor Butt; treasurer, Elizabeth Grader; secretary, H. R. Hill; directors: C. J. Vick, J. H. McTavish, Edithemma Muir, William Carr, E. T. Ireson and J. F. MacLaren.







# HARNESSING HORSEPOWER

WILD WATER cascading over rocks accentuates the rugged beauty of the Sandy Gray Falls on the Musquash river shown in this illustration.

**By J. R. MONTAGUE**

Assistant Hydraulic Engineer, H.E.P.C.

*THIS is the third in a series of articles which outline, step-by-step, the work involved in the building of a power plant from the time a site is selected until the electricity is available in homes and factories that may be located hundreds of miles away.—The Editor.*

**I**N this article we shall consider some of the steps leading to the selection of a suitable site for the development of power.

Most of the water power resources of the Province are now generally known. Dominion and Provincial departments have, from time to time, prepared data on potential power sites, based on material collected from various public and private surveys.



**J. R. MONTAGUE** exploring the full storage and power potentialities of the watershed, an appropriate head and capacity for a specific site can be selected with the assurance that the most beneficial ultimate development of the river will be obtained.

To select or determine a source of power, reference is first made to all available data. Suitable power sites, within economic transmission distance, are selected for further investigation by survey and preliminary engineering study, with a view to determining their relative merits.

A party, consisting of field engineers and their assistants, is sent out to the prospective sites to make a survey,

which is of such a character that estimates of cost of developing power may be made with reasonable accuracy.

The engineer must consider the possibilities of getting the maximum practical head at the site, involving, among other things, a study of all likely sites for dams, canals, headworks, tunnel, pipe line and power house. The flooding of lands, roads, railways, bridges and other factors require investigation. If the lands likely to be affected are patented and developed, some particulars of the boundaries of these lands and their value are needed. Soil and rock conditions, which may be used for foundations of structures, must be explored. Information must be obtained regarding transportation facilities—both road and railway and occasionally water.

Precipitation and river flow statistics are collected to determine the amount of water that may be made available at the possible developments. In making the estimate of flow, the characteristics of the river discharge with regard to its dependability are carefully studied. To compensate for the low natural run-off periods, consideration is given to the possibilities of obtaining storage for the excess freshet flows by the creation of reservoirs. These may entail the construction of dams at the outlets of lakes on the watershed, or by the provision of large headpond facilities at the power site. Measurements of river flow by current meter are made if these records are not otherwise available.

This phase of the study is intimately related to the work of the Dominion Water and Power Bureau, which



measures and records the flows of many of the rivers in the Dominion. The Meteorological Service of the Department of Marine supplies records of rain and snow fall. With the co-operation of this bureau, precipitation stations have been established at a number of the Commission's power plants and storage dams, to supplement the data obtained from numerous other stations distributed throughout the country.

In the pursuit of field information, the Commission's engineers make use of all available forms of transportation. Along rivers, 20-foot and 22-foot long freighting canoes are frequently used. These canoes, loaded with men and freight, travel comparatively long distances along northern streams. During the winter months, dog teams are called into service. There are occasions when canoes, men and freight are transported from lake to lake by aeroplane. The engineer engaged in this work must know how to "get around" in the bush country, as in a large measure the general well-being of his associates and the expediting of the surveys depend upon this knowledge.

### Photographic Aerial Surveys

Preliminary information on territory for which topographic contour maps are not available can be obtained economically and quickly by photographic aerial surveys. A ground survey party establishes over the area a number of base lines and elevations. From the photographs, and with the assistance of the surveyed lines and levels, "form-line" drawings are produced, usually at a scale of one inch to one thousand feet. An interesting technique has been developed in recent years in the making of these three dimensional "form-line" drawings. These drawings enable the engineer to detect such features as the low spots of the flooded area or flowage plane. Very often they enable him to determine the elevation to which the water might be taken, and the location of side dams which may be necessary to prevent "run-arounds."

Based on the information acquired through the several field and office investigations, comparative estimates are prepared for the various sites under consideration. These estimates include the more important features of each of the prospective developments, such as dams, canals, conduits, power house with equipment, tailrace channel, transformation and transmission to the point of delivery, which may be an industrial area or a main trunk transmission line from which power is "tapped" at a number of points of demand.

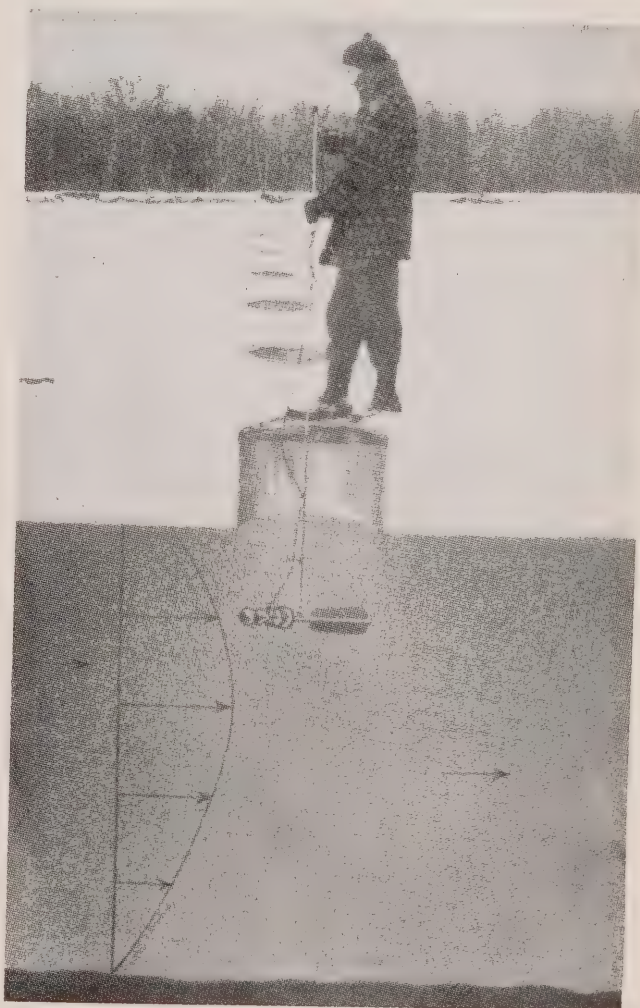
Having selected a suitable site for development, it is frequently necessary to obtain additional topographical and foundation data at the locations of the principal structures, in order to determine their exact location and type. These data are obtained in sufficient detail to enable the head office engineering staff to proceed with the design of the several parts of the project and to prepare the necessary construction drawings, to specify the capacity and type of the various items of equipment required and to arrange for its purchase and installation.

The necessary authorities are obtained from the various jurisdictions, and the lands and rights required for the project are secured. Before construction is undertaken,

approval of the proposed works is secured from the Provincial and Dominion authorities having control of waterways.

### "Stadia Topography"

The art of obtaining reliable information for the selection of a power site has progressed, as have other phases of hydro-electric power developments. The two principle instruments used by the engineer in the field are the transit (or theodolite) and level. Both of these instruments are composed of an optical tube, with an eye-piece at one end, and a suitable object "glass" at the opposite end. The optical tube is mounted on an appropriate base, which can be adjusted to the true horizon and the whole is carried on an adjustable but stable tripod. The rays of the image sighted, meet at the focal plane, at which are inserted spider web cross "hairs" or a glass diaphragm on which are inscribed, in the transit, three horizontal lines, a definite distance apart, which are known as "stadia lines." The distance separating the two extreme lines, when sighted on



DEPTHS AND velocities of water can be determined by use of a current meter supported on a rod as shown in the reproduction on the right. In the winter holes have to be made in the ice in order that measurements may be made at various points.



a graduated engineer's rod, intercepts a length in feet, which, when multiplied by 100 gives the distance between the instrument and the object on which the rod is erected.

In this way, the engineer has developed a system of survey known as "stadia topography." It comprises the determination of length, breadth, and elevation of topography, with a minimum use of chains or tapes. It is peculiarly adapted to hydrographic surveys, which is the principle type of the survey work entailed in developing a power site. This means of survey is now used extensively in military reconnaissance work and on anti-aircraft guns.

In the taking of "aerial" topography, which is frequently used by the Commission in mapping power sites, water storage basins and transmission line locations, the usual altitude of the aeroplane is, as nearly as possible, 8,250 feet. The photographs should overlap sixty per cent. In order to develop the third dimension (that is the elevations), an elaborate stereoscopic device is used. By the adjustment of two adjacent photographs under the stereoscope, the third dimension is apparent to the observer. On the photographs are noted sundry control elevations, which had been obtained previously by a field party. Form-lines, or "lines of equal elevation," generally at 25-foot intervals, are thus identified and marked on the photographs. These marked photographs are thereafter placed in a Sketchmaster, which is placed in a precise manner over the survey grid, previously prepared. The Sketchmaster with the use of prismatic reflectors and concentrated light, facilitates the preparation of a "contour" drawing at a scale of one inch equal to 1,000 feet. These drawings, known as "form-line" drawings are now extensively utilized as an eco-

nomical means of preliminary survey for a number of purposes.

In the determination of river flow, a current meter is used. This device is fitted with a small propeller on the axis of which is an electrical contact, which conveys to the head-phone on the operator in a canoe, boat or carriage suspended from a cable, clicks representing the revolutions of the propeller. The number of revolutions in a given time is a function of the velocity of the water. This instrument is moved from point to point across the stream and at each point the velocity is observed at various intervals of depth. From these several observations the mean velocity of the stream at the section is computed and this, when applied to the area of the section, gives the quantity of water passing the station, measured in cubic feet per second. When winter measurements are taken, holes are cut in the ice cover at suitable intervals, into which the current meter is dropped to the required depths.

It is of utmost importance to investigate the type and quality of the soil and rock, through which canals and tunnels must pass, or on which heavy structures may be founded in a stable and watertight manner. Power house foundations must be adequate, not only to withstand heavy loads, but the effects of vibration as well. If the overburden or soil at the site is but a few feet in depth, trenching is used to expose the rock for examination. If the overburden is too deep for trenching, jetting or wash-boring is an economical means of determining the depth to rock.

In jetting, a pipe is forced into the ground, emitting a jet of water under relatively high pressure. The return

THIS INSTRUMENT-MAN, A. L. Colpitts, is shown (right) in action at a location which is regarded as a likely site for a power development.

HOPS BETWEEN lakes can be made in a minimum of time when engineers use planes in making surveys of prospective power sites. Local operations are carried on with the aid of the canoe which is lashed to one of the pontoons of the plane shown in this illustration.





water comes to the surface between the outside of the pipe and the wall of the hole. This method is suitable in clays and certain other fine grained soils of readily erodible char-



**HUSKIES ALSO** play a part in surveying power sites in winter when the snow is deep and the going is tough. Here is a team of huskies in action.

acter. When the overburden contains a relatively high percentage of silt or gravel, jetting is replaced with wash-boring. In this method, a pipe or "casing" three to four inches in diameter is used to prevent caving of the side walls of the hole. To sink the casing, material is removed from within and immediately below it by means of jetting, as above. In this case the jetting pipe is usually about one inch in diameter. Chopping bits reduce the larger particles of gravelly material to a size which will enable their removal by the jet which forces them up with the outflowing water, between the inner and outer pipes. A heavy hammer of "tup" forces the casing progressively downward as the jet clears the way. When boulders are encountered, sufficiently large that they cannot be forced to one side of the casing, shooting by dynamite is resorted to. The boulders are thus cracked or forced aside.

## Rock Samples Studied

When it is necessary to determine the quality of rock, diamond drills or other types of core drills, are used to pro-

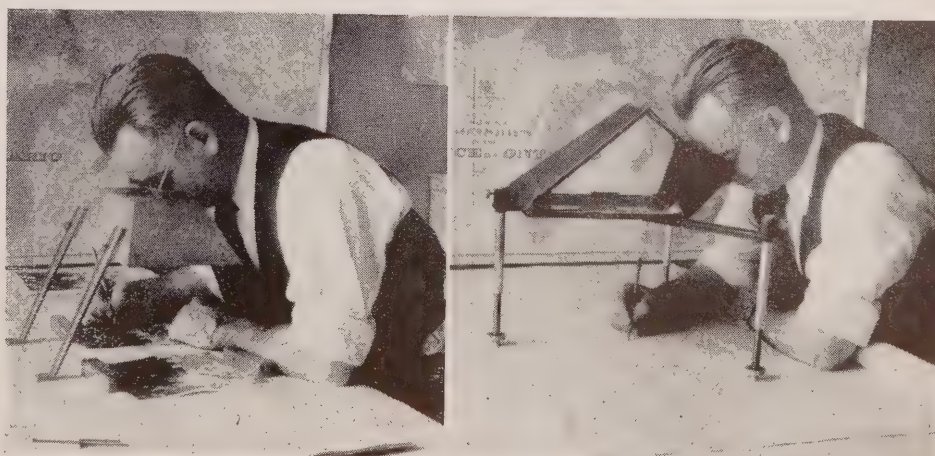
duce cores or samples. From an examination of these cores, the quality and character of the rock can be determined. By applying air or water pressure to the drill hole, the "tightness" of the rock can be determined. If a drill hole, thus tested, loses pressure, the rock may require to be grouted to ensure its suitability as a foundation for a dam or other water control works. If the rock to be drilled is covered by a heavy layer of earth, access to it is obtained by jetting a casing through the overburden, by the method previously described, and inserting the drill tools through this protected opening.

*(Continued on page 26)*



**IT IS** important that engineers have data on the character of soil and rock in the vicinity of a prospective power site. This is accomplished by what is technically known as wash-boring and diamond drillings as shown here.

**FIELD DATA** and aerial photographs plus the aid of instruments known as a stereoscope (left) and Sketchmaster (right) enable this technician to produce form line drawings which show topography of any specific area.





# Looking in at STRATFORD



IN THE above picture is A. B. Manson, manager of Stratford Public Utilities Commission, at his office window, while the lower right shows a view of the Shakespearean garden, which is across the street from the utilities office.



**S**TRATFORD, Ontario, is a picturesque spot where the visitor runs across such names as Shakespeare, Falstaff, Romeo, Juliet and Hamlet.

These, along with the name, Avon, designate the five wards of this highly industrialized city which is the capital of Perth County.

With its pleasant parks, sylvan retreats, rustic bridges and the beautiful winding Avon river, Stratford is, in many respects, a delightful counterpart of the old English town. In such an atmosphere one might almost expect to enter police court and find Portia on the bench saying: "The quality of mercy is not strained . . ." or to enter the council chamber and hear the mayor ask: "To be or not to be? . . ." when submitting a motion.

The site of the city, according to information given to Hydro News on a recent visit to this municipality, was

named by the Canada Company in 1831 as a result of the early English settlers having given the name Avon to the lake-like river, on which the city is located. As the most important place on the famous river in England is Stratford-on-Avon, birthplace of William Shakespeare, world renowned poet, player and playwright, this Ontario settlement became known by the same name.

There are other Shakespearean tie-ins, such as Anne Hathaway, Romeo, Juliet, Shakespeare, Avon, Falstaff and Hamlet public schools, and quite a number of the city streets are called after the bard's characters, including Portia boulevard and Verona park.

## Magnificent Park Lands

Another unique feature about this lovely community, which is one of the leading furniture centres in Canada,

*(Continued on page 18)*





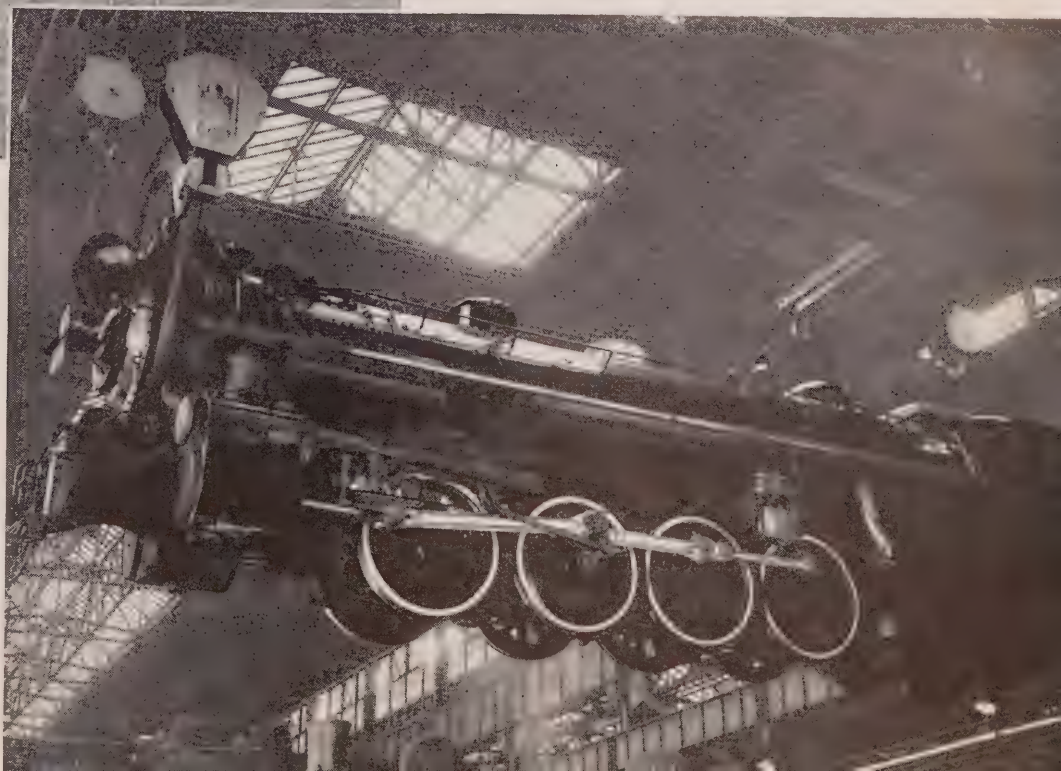
STRATFORD HAS quite a number of Shakespearean "tie-ins" and some of the streets are named after the world-renowned bard and his characters, such as Shakespeare street, shown above.

THIS PICTURESQUE dovecot (below) is reported to be the remains of an old mill in this locale, which was destroyed by fire, the Parks Commission having salvaged the chimney.



THIS ILLUSTRATION shows one of the sylvan retreats (left) in the beautiful park lands adjoining the Avon river, where the swans and ducks beg food from the passers-by.

THE PHOTOGRAPHER happened along when the electric crane in the Canadian National Railways repair shop was transferring a locomotive to another part of the building. These cranes are capable of lifting 200-ton engines with the greatest of ease.





BELOW SHOWS superintendent L. G. Powell (arms folded) with the line gang, who were getting ready to "shove off."



A SECTION of the electrical appliance repair shop (above) which is kept pretty busy making repairs in these days of war-time shortages.

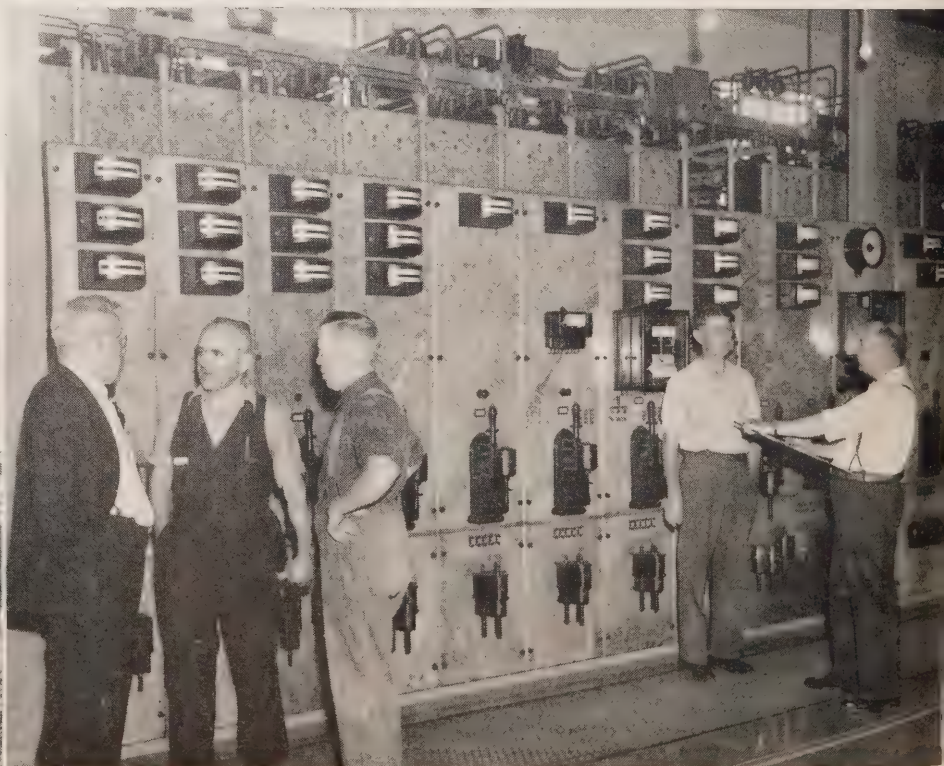
and which is materially benefitted from low-cost Hydro power, is its magnificent park lands embracing about 130 acres, and running from east to west right through the centre of the city.

This beautiful park area, adjoining the Avon river, is a romantic spot, with its swans, ducks, rustic bridges, lacy willow trees and meandering footpaths. And then there is the Shakespearean garden, which is reported to be a replica of William Shakespeare's garden in England many

years ago, complete with a variety of old fashioned flowers and sundial.

This extensive park land offers opportunities for practically every type of sport and entertainment. There is a submarine-lighted swimming pool; public bathing beach; a shell bandstand; bowling green; dance pavilion, soft ball diamond and tennis courts with electric flood lights; golf course; picnic grounds; skating and hockey rinks in the winter time (Stratford boasts of its hockey teams). An

THE RIGHT illustration shows a section of the control room of the municipality's substation with some of the staff talking things over. On the left is an exterior view of the substation.





unusual characteristic of these amusements is that they are laid out along the river bank and are within walking distance of the centre of the city.

Stratford, besides being outstanding for its beauty, is essentially a manufacturing city. A diversity of industries includes locomotive repair shops; various textile factories, meat and dairy produce packing plants; the manufacture of all-wood furniture; rubber products; harnesses; brass and metal; paper boxes; shoes and many others.

### Use Low-Cost Power

These industries all use low-cost Hydro power, and this municipality's load at the present time is approximately 7,800 horsepower. This city is proud of the fact that it was one of the thirteen original municipalities to join the Hydro family and has been benefiting from the use of Hydro since 1910. At that time, the load was about 134 horsepower, and today 4,511 domestic, 576 commercial and 109 industrial consumers are served over a network of 40 miles of primary distribution circuits.

The first Stratford Public Utilities Commission comprised James J. Mason, chairman; mayor W. S. Dingman and Angus McDonald, commissioners.

According to statistics, there were financial difficulties in the early days, but once the commission was established, the load growth became a barometer of industrial progress, and at the present time this municipality is in an enviable economic position.

Hydro News had the interesting experience of looking through the Canadian National Railways repair shop, which, incidentally, has a load of approximately 1,000 horsepower. This is the only shop this side of Winnipeg, where

locomotives are completely stripped, repaired and rebuilt. In this repair shop, which covers an area of 268,000 square feet and which is probably the largest in Canada, there are electric cranes capable of lifting 200 ton engines with the greatest of ease. Of their staff of over 1,100, many of the employees are girls and women, and, it is reported, that the shop has taken on a new spick and span appearance since the ladies came.

### Many Large Companies

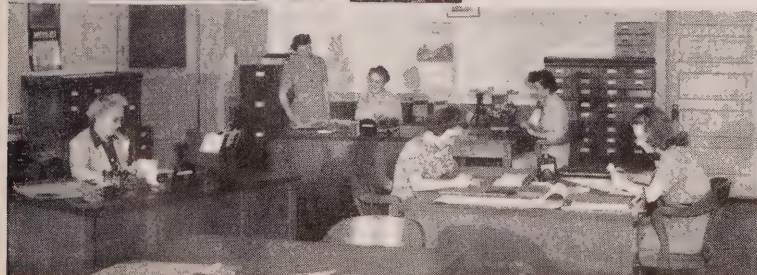
Other large companies in this flourishing centre include Preston-Noelting Limited; Imperial Rattan Company Limited; Kroehler Manufacturing Company; McLagan Furniture Company; Bartlett Foundry; Corrugated Pipe Company; Stratford Machine and Tool Company; Stratford Sheet Metal Works; The Stratford Brass Company Limited; G. L. Griffith and Sons Limited; The Grosch Felt Shoe Company Limited; Avon Knit Limited; R. M. Ballantyne Limited; Swift Canadian Company Limited; The Whyte Packing Company Limited; Glass and Mirrors Company; Kist Canada Limited and many others.

A city of many fine buildings, homes, schools and churches, Stratford, with a population of approximately 17,200, has an abundant supply of pure water from artesian wells and is very proud of its public health record.

Among the outstanding Canadians who were born in this district is Dr. W. A. Riddell, who was Canada's Advisory Officer to the League of Nations at Geneva, and later counsellor at the Canadian Legation in Washington. At the present time, he is High Commissioner for Canada in New Zealand and he has recently been appointed as head of the Department of Diplomatic Preparation at the University of Toronto, which appointment, however, will not take effect until July 1, 1945. The late Sir John C. MacLennan was also born in Stratford. He was head of the Physics Department at the University of Toronto for many years, and was assigned the task by the Imperial War Council in the First World War, of producing an effective weapon against the submarine menace. For his outstanding work in this connection he was knighted by His Majesty the King.

Hydro, the great driving force behind this industrial centre is administered by a progressive commission comprising G. I. Graff, chairman; N. H. Siegel, C. N. Greenwood, E. A. MacIntyre and mayor J. Waldo Monteith, commissioners; and A. B. Manson, general manager, who has served the Stratford municipality for the past 33 years.

THESE THREE illustrations are photographic impressions of the Stratford utilities office and staff. In the upper left hand picture are the billing machine, addressograph and graphotype. The lower left shows the accounting office, and on the right is a view of the general office.





# PHOTOGRAPHING



BY THE EDITOR

## INVOLVED CAREFUL PLANNING

**P**HOTOGRAPHING a dream is quite a fascinating experience. In this instance, we are, of course, referring to the front cover reproduction which portrays a child's dream about Santa Claus. It was not accomplished by simply loading a camera, going into a trance and waiting until a passing cloud obliged with a lift to the Land of Make-Believe. It involved wide-awake planning and some hard but interesting work.

To our way of thinking, it is a picture which portrays a dream which is shared by millions of children—and even grown-ups—at this season. (It is, of course, not permissible to have such dreams in places where Santa is “verboten!”)

How did we reproduce this cover? It, of course, all started with an idea which, by the way, prompted us to jump out of bed at 3.10 one morning and make a few rough sketches. Knowing what we required, the next problem was to get the models and the necessary props or articles for our pictures. Our first picture was easy to obtain. Bobby, 3½-year-old son of Roy Harmer, supervising industrial engineer of the H.E.P.C. sales promotion department, was a delightful dreamer—the answer to a photographer's prayer.

## TALL SPRUCE DONATED BY DAVID FORGAN

Then there was the second photograph and that, in a very literal sense, was something of another colour. First, there was the question of a tree. Many avenues were explored but without any luck. We had reached the point where we had unworthy thoughts every time we passed a nice looking tree on a private lawn when David Forgan, chief construction engineer of the H.E.P.C., came to our rescue. “There is,” he said, “a really good tree at my place. You can have it if you like.”

Did we like? We had that ten-foot white spruce parted from Mother Earth and installed in the Toronto photographic studio of Bill McCullagh in record-breaking time! But it took more than a Christmas tree to complete our dream. We required the personal co-operation of St. Nicholas himself. The prospect of having to embark upon a trip to the North Pole was definitely not inviting even if we could have been sure of meeting the Old Man, the Fairy Queen and all these hard-working little gnomes in that tinkling toy factory somewhere north of the 80th Parallel. There wasn't time; we lacked the kind of attire worn in polar regions and, besides, we are allergic to wool!

# A



## SANTA'S AIDE MAKES DREAM COME TRUE

Then, quite suddenly, our luck changed. We were introduced to one of Santa's most charming and able helpers in the person of Frances Turner who is well versed in the technique of making dreams come true. From her hide-out in the Robert Simpson Company store, Miss Turner made a contact by phone with Santa. Very soon, things began to happen. Several smiling brownies appeared with a special delivery of some of the things of which little boys' dreams are made—a horse, a drum, a toy dog and other articles. They also brought a Santagram which read: “Harnessing reindeer immediately. Will arrive in time for picture. S. Claus.”

This news started a flurry of activity at the photographic studio where members of the Hydro News staff went into action and decorated the tree. Only one thing remained to be done. There had to be lights on the tree for this year, with major power restrictions removed, we can do more than dream about a brighter Christmas. An S.O.S. call was sent out to another of Santa's little helpers in the person of Jack Thompson of the H.E.P.C. administration building management, who came through with flying colours in the form of multi-coloured Christmas tree lights.

## WITH HIS BAG WELL-FILLED SANTA ARRIVES

No sooner had the finishing touches been put to the tree than a rousing “Ho! Ho!” signalled the arrival at the studio of jolly old St. Nicholas with a well-filled bag slung over his shoulder. His eyes fairly twinkled as he strode up to the tree and, for the benefit of the waiting photographer, proceeded to give a preview of how he plans to spend Christmas Eve. And that, was the consummation and realization of a dream.

We had now taken two separate photographs. The negatives were then made into one composite picture, printed on a semi-matte paper, and turned over to an artist for the necessary colouring. From the finished art work the engraver made the copper colour plates which, in turn, reproduced the illustration on this month's cover of Hydro News.

And so, that is the story, of how we made a Christmas dream come true. We rather like the result. What do you think?



# HYDRO TAKES OVER OPERATION OF CALEDON ELECTRIC PLANT

**Purchase Price Is \$100,000—Agreement Effective  
From December 1 — Plan Pro-  
gramme Of Rehabilitation**

**P**URCHASE of the Caledon Electric Company at Erin by The Hydro-Electric Power Commission of Ontario for \$100,000 has been announced by Dr. Thomas H. Hogg, H.E.P.C. chairman, the Commission having taken over operation on December 1.

This company's holdings include the water power site, combined hydraulic and Diesel engine generating plant, and transmission and distribution system. Located in the northerly part of Peel County and the eastern part of Wellington County, between the Georgian Bay and Niagara divisions of the Southern Ontario system, this company serves a total of 1,010 consumers in Erin, Alton, Hillsburg, Caledon East, Inglewood, Cataract and the Forks of the Credit, including 144 farms over a network of 71 miles of rural transmission lines.

The Caledon Company obtains its supply of power from a 400-horsepower hydraulic development located on the Credit river, about nine miles south of Orangeville. During low-water periods, however, Diesel engines, having an approximate capacity of 550 horsepower, are used to augment the power supplied by the hydraulic development.

This company has been in existence for a number of years, and the plant is now operating at full capacity and is unable to meet the demands for new services, which have been requested by farmers and other consumers in the district served. In the main, existing, as well as new, con-

sumers will benefit materially when the H.E.P.C. takes over the operation of this plant on December 1. The present rates are, in general, higher than the corresponding Hydro rates under the new standard uniform rural rate structure.

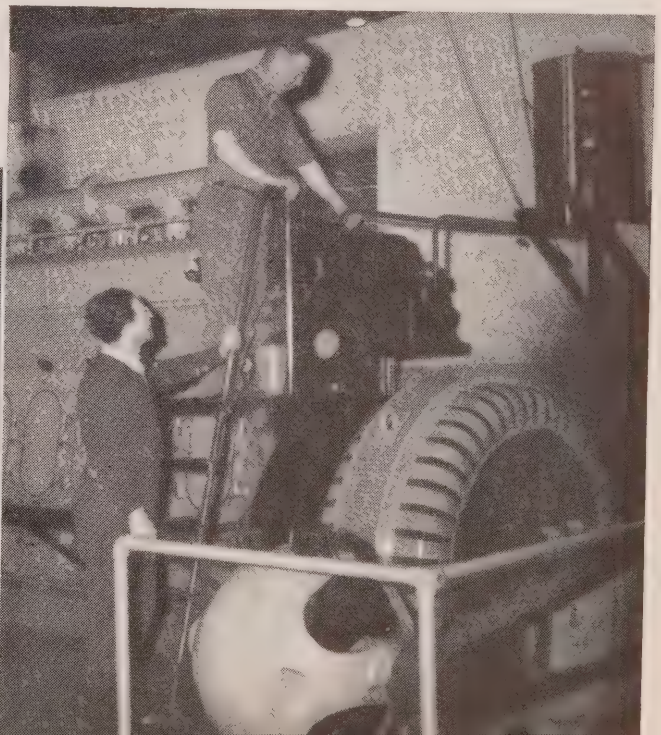
It is the intention of the Commission to start work immediately on the rehabilitation of the company's transmission lines so that new additional services may be supplied as quickly as possible.

It is expected that service will be continued to the majority of these consumers at 60 cycles, which will involve the erection of a 1,000 kv-a substation at Orangeville to step-down the voltage of the Georgian Bay division, which is 22,000 volts, to that of the Caledon system, which is 6,600 volts.

The Commission plans to operate the present generating plant on the Credit river, but eventually this system will be tied in with the Georgian Bay division of the Southern Ontario system.

Originally the Caledon hydraulic generating plant was an old stone grist mill, which was taken over in 1895 and remodelled to house several small hydro-electric units, which have since been scrapped and replaced by more modern machines. In addition to the territory immediately surrounding the plant, the company supplied service for many years to the town of Orangeville, and, until recently, in competition with the Orangeville Hydro-Electric Commission. The franchise in Orangeville, which was secured in 1905, did not expire until 1930, but the Orangeville commission purchased the company's holdings for that district in 1926.

MEMBERS OF the staff at the Caledon plant (below) are, from front to rear, Charles S. Hinchliffe, superintendent; Howard C. Scott, operator; Ernest Teeter, lineman; Rueben O. Harris, president; and Herbert L. Harris, general manager. At the right is one of the Diesel generators.







### LONG SERVICE RECORD

**A**LEXANDER BROCK MANSON has been associated with the municipality of Stratford for the past thirty-three years, having been city engineer from 1912 to 1928, and general manager of the public utilities commission since that time.

He was born in West Zorra Township, Oxford County, and attended Stratford Collegiate Institute, and later the University of Toronto, graduating with his Bachelor of Science degree in 1910.

Mr. Manson has a diversity of interests. He is a member of the Engineering Institute of Canada; a registered professional engineer of Ontario; past president of the Association of Municipal Electrical Utilities; past chairman of the Canadian Section of the American Water Works Association, and he occasionally finds time to indulge in his favourite sport of lawn bowling.

Mr. Manson was overseas with the Royal Canadian Engineers in the First World War.

### COMMISSIONER GREENWOOD

**A**NATIVE of Blenheim, Ontario, commissioner CHALMERS N. GREENWOOD has been with the Stratford Public Utilities Commission for the past eighteen years, and during that time was chairman for four years. He also served as alderman for fifteen years; mayor for one year, and on the Suburban Roads Commission for sixteen years.



For some time, Mr. Greenwood has been chairman of the Ontario Board of Examiners of the Embalmers and Funeral Directors, and is past president of the Ontario Funeral Service Association.

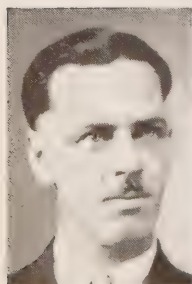
His special interests include lawn bowling and hockey promotion.

### COMMISSIONER MacINTYRE

**A.**ELMORE MacINTYRE, commissioner of Stratford Public Utilities Commission, was born in Collingwood, Ontario. He attended the collegiate institute at Owen Sound, and later the Toronto Central Technical School.

During the First World War he was with the 4th Canadian Mounted Rifles (Mississauga Horseguards).

Mr. MacIntyre has served on the Stratford commission since 1932. His hobbies are hockey and baseball.

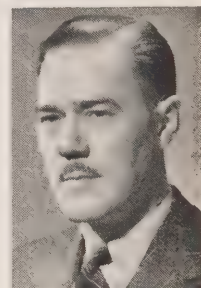


### MAYOR OF STRATFORD

**M**AYOR J. WALDO MONTEITH was born in Stratford and, there, received his early education. He later attended Trinity College and University of Toronto, and has since become a chartered accountant.

He was alderman of Stratford for three years and was elected mayor in 1944. While at school he took an active interest in hockey and football, and now he enjoys a good game of golf.

The name of Monteith is widely known in Stratford and vicinity, his father having been the Hon. Dr. J. D. Monteith, provincial treasurer and minister of public works and labour; his cousin, the Hon. Nelson Monteith, provincial minister of agriculture; Andrew Monteith, first member of legislative assembly for North Perth in 1867, and later a Member of Parliament for North Perth; and his uncle, J. C. Monteith, M.L.A., for Northern Perth.



### COMMISSIONER SIEGEL

**N**ORMAN H. SIEGEL, commissioner of Stratford Public Utilities Commission for the past nineteen years, was born and educated in Mitchell, Ontario. During 1910 and 1911 he worked with the Mitchell Public Utilities Commission when the change-over was made from steam to electricity.

Mr. Siegel takes a keen interest in fishing and baseball.



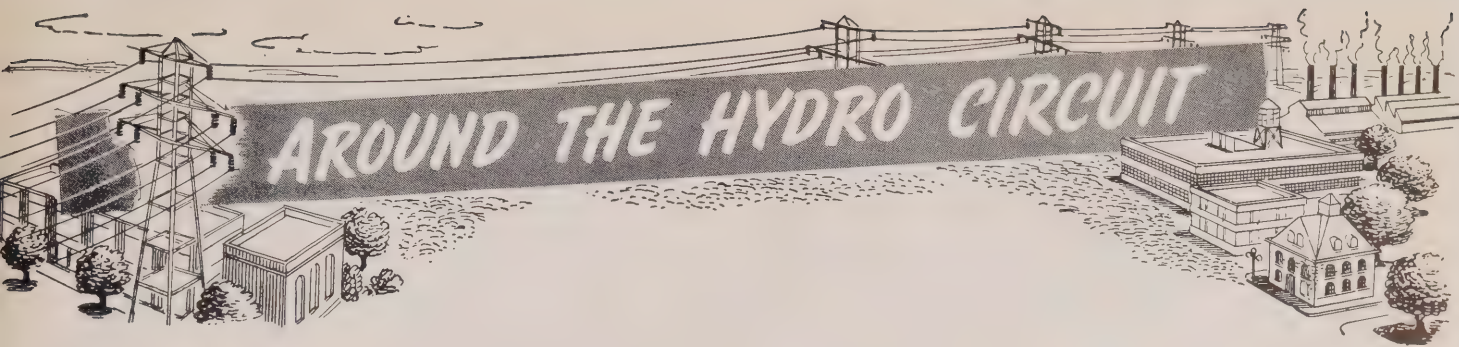
### CHAIRMAN AT STRATFORD

**C**HAIRMAN GEORGE IRWIN GRAFF has been a member of the Stratford Public Utilities Commission for the past eleven years, during which time he was mayor for two years. He was born in Port Elgin and attended schools in Perth County.

Mr. Graff is an active figure in the life of Stratford where he is engaged in the real estate business. His hobbies are gardening and bowling.







## ST. MARYS MANAGER PASSES

**WILLIAM McKEE**, manager and secretary-treasurer of the St. Marys Public Utilities Commission, died suddenly at his home on November 3.



Mr. McKee, who was secretary of District No. 6, O.M.E.A., came to Canada from Liverpool, England, 34 years ago. He was closely connected with operations at Hydro's Queens-town-Chippawa development and, 17 years ago, became manager of the St. Marys Public Utilities Commission.

He is survived by his widow, the former Eleanor Dowd; one son, Cpl. William McKee, R.C.A.F., and three daughters, Mrs. Bert Harris, Mrs. Wilmer Brown, and Patricia, at home.

## O. E. FLEMING DEAD

**A**N associate of the late Sir Adam Beck in his crusade for Hydro, **OSCAR ERNEST FLEMING, K.C.**, aged 83, corporation counsel and one time mayor of Windsor, died recently at his home in Toronto.



He was born in Milton, and graduated from Osgoode Hall in 1885. In 1890, he was elected as an alderman in Windsor, was mayor from 1891 to 1893, a member of the Windsor School Board from 1887 to 1890, and for several years was chairman and organizer of the Essex Border Utilities Commission which was formed to manager the joint public services of Windsor and the adjacent municipalities prior to the incorporation of the present City of Windsor. The name of Mr. Fleming appeared on the King's Counsel list in 1907.

Surviving are his widow, Caroline Drake Fleming; five sons, Major Canmore Fleming, Capt. Oscar Fleming, S/L Hugh Fleming, Capt. Donald Fleming and Kenneth; and six daughters, Mrs. Harold Kerrigan, Mrs. Phillip Cross, and Mrs. Charles Cleather, all of Montreal, Mrs. David Wright, Thelma and Augusta, all of Toronto.

## REPORTED MISSING

**WILLIAM HAROLD JANNEY, R.C.A.F.**, formerly of the H.E.P.C. accounting department, accounts receivable section, has been reported missing. He was on the Commission's staff from 1931, until his enlistment in March, 1942.

## OWEN SOUND CHAIRMAN DIES

**JOHN McQUAKER**, chairman of the Owen Sound Public Utilities Commission, and a man who was closely linked with the business, educational, church and fraternal as well as the municipal life of the city, passed away on November 18 in his 81st year.

"Glenburnie Farm," near Walters Falls, Holland Township, was Mr. McQuaker's birthplace. He attended school at Holland and, while a boy, went to Scotland for a year.



After his marriage to Jessie Carrie in 1889, he took up residence on the McQuaker farm until the spring of 1895, when he moved to Owen Sound and entered the creamery business. With the passing of time, Mr. McQuaker became known as one of the outstanding creamery men in the province. He was a director of the Western Dairymen's Association for many years and served also as president for a time. It was in the year 1898 when he started the grocery business which became known as McQuakers Limited. In 1931 he disposed of his interest in the creamery business and, four years later, retired from the grocery business.

Mr. McQuaker was first elected to the Owen Sound town council in 1906 and continued as a member until 1919, having served as mayor in 1914 and 1915. He was warden of Grey County in 1919 and, during the last war, was actively associated with many patriotic activities.

Since his retirement from business he had devoted most of his time to the work of the public utilities commission of which he had been chairman for a number of years.

Surviving are his widow, two daughters, Mrs. S. H. Pearce and Mrs. Frank Smith, both of Owen Sound, and three grandchildren.

## SIR HERBERT COUZENS DIES

**SIR H. HERBERT COUZENS, K.B.E.**, aged 67, Brazilian Traction president, who died recently in England, was a former general manager of the Toronto Hydro-Electric System. He was born in Devonshire, England, and was educated in Tauton schools.

He came to Toronto in 1913 to become general manager of the Toronto Hydro-Electric System. In 1920, he became general manager of the Toronto Transportation Commission, and held this position until 1924, when he went to Brazil as executive vice-president in charge of the subsidiary companies of the Brazilian Traction, Light and Power Company, Limited.

He was named a Knight of the British Empire in the Coronation honours' list of 1937. Surviving are his widow, Lady Elsie, a son and a daughter, all in England.





**H**OMEMAKERS who make a habit of careful planning throughout the year are not likely to get into difficulty at Christmas when there are so many things demanding attention at the same time.

For instance, there's the question of presents, getting them wrapped properly and labelled correctly and then on their way to the right people. Without care and planning anything can happen. To illustrate the point, we recall an embarrassing but amusing incident that occurred when the members of one family gathered round a gaily decorated Christmas tree a few years ago. Someone, who had been appointed to act as old Santa, was handing out the gifts. Grandpa's name was called, and he stepped forward to receive a very attractive package which had his name on it. "Open it, Gramp," shouted one of the kiddies. Grampa opened it and gazed in blank amazement and obvious embarrassment at the contents—a pair of ladies "dainties" and a slik slip! Meanwhile, sister Mary, aged 20, had opened a beautifully wrapped box bearing her name and also the words: "For you alone, with the hope that these little gifts will give you lots of happiness." In the box she found a meerscham pipe, a tin of tobacco and a box of cigars!

We believe that Mary and Gramp discussed the matter in camera and arrived at a compromise. It must have been satisfactory, for Gramp was smoking the meerscham the last time we saw him, and Mary—well that's another story!

\* \* \* \*

Now, to change the subject, we rather enjoy Christmas parties. We're not throwing out any hints, but we would like to pass along a few thoughts that might be helpful to those who are planning parties this year. Three important points to bear in mind are: (1) the setting, (2) decorations, and (3) the number of people to be invited.

To capture the Christmas Spirit you don't have to serve lavish spread. Very simple fare will do. For the invitation to eat, pass a tray of fruit-juice cocktails (raspberry or cherry juice), or a combination of juices and a sprig of mint or green cherry for interest. The relish tray is presented at the same time filled with all kinds of tidbits. Some suggestions are cheese crackers with olive mixture spread; soda biscuits with minced sausage relish; zwieback, carrot curls, whole pickles, radish roses, celery curls and turnip sticks.

\* \* \* \*

The main course is also in buffet-style. Something deluxe and delicious, served in attractive dishes, will contribute towards a successful evening. Remember, this is

an occasion between Christmas and New Year when most folk are somewhat tired and stuffed. Therefore, a light party lunch will be in order.

Look these over: Hot open LOBSTER SANDWICHES; jellied STAR SALAD of diced chicken, celery, green pepper in aspic; WEDGIES of 4 slices minced ham or bologna spread with cream cheese, grated onion and mustard, placed together layer cake fashion, and cut into triangles; PORK PARCELS of a small amount of sausage-meat rolled in biscuit dough and with pieces of green pepper cut in slashes the shape of a bow; CHICKEN FRICASSEE or VEAL À LA KING in toasted bread cups; YULETIDE SALAD made of orange, grapefruit, apple sections in petal shape design and the centre made of cottage cheese, chopped nuts and halves of cherries; CREAMED MUSHROOMS over diced turkey on toast.

\* \* \* \*

Dessert is where you can provide something to maintain staunch friendship by serving a sparkling or aromatic dish. An easy offering to have ready is a steaming spiced sauce poured over warmed DOUGHNUTS and garnished with red and green maraschino cherries. If you are fortunate to have an electric refrigerator, the refreshing food to serve is a SHERBERT or ICE CREAM accompanied by crisp cookies or plain cakes. MOULDED FRUIT, in green and red gelatin, and flavoured with fruit-juice, is also tempting, while we also suggest that you garnish a fruit cup with chocolate leads, steamed mixed peel or coloured honey. Graham wafers put together with MINCE-MEAT AND CHEESE are good, if thoroughly chilled first.

Even if it's an after-cinema snack, the piece of Christmas cake may be served with a variety of beverages during the holiday week. Coloured ice cubes in chilled FRUIT JUICES, MILK SHAKES, EGG NOGS, SODA, FROSTED CHOCOLATE or HOT COCOA, SPICED TEA or COFFEE are special hints.

\* \* \* \*

## HINTS FOR HOMEMAKERS

When carving turkey, first cut through the leg, crack the joint, and then detach the leg from the turkey. Cut the breast in medium thick slices, not in chunks. Use a sharp knife.

\* \* \* \*

If you spill pumpkin filling over the edge of the crust it is likely to burn during baking. Avoid this by pouring only part of the filling into the crust, put it in the oven, then pour in the balance of the filling.

\* \* \* \*

Mix a little powdered sage into the next batch of baking powder biscuits. Use them for creamed chicken shortcakes.

\* \* \* \*

If you heat the nuts and fruits and dredge with flour before they go into the fruitcake batter, they won't go to the bottom like a bar of soap in the dishpan.

\* \* \* \*

And just a closing thought—it is our sincere wish that this may be the last wartime Christmas, and that the New Year may bring us the blessing of enduring peace. May we all realize our cherished hopes as we go forward together along the highways of to-morrow.





# ONCE IN A YEAR

**O**VER \$225 was turned over to the Ontario Hydro-Electric Club's Consolidated War Services Fund from a draw, which realized \$163, and the proceeds from the annual At Home held under the club's auspices at the Club Top Hat. This year there were more than 300 in attendance.

A fifty-dollar victory bond, first prize in the draw, went to Reg. Lewis of the hydraulic department, while a painting, donated by the artist, W. Charles Collett, was won by Vince Catling, of the laboratory staff. Proceeds are used for the purchase of comforts and cigarettes for Hydro employees on active service.

MEMBERS OF the dance committee (below) are: F. B. Pope, Marion Corby, Bob Lyle, Mrs. A. W. Glover, W. A. Morris, and Roy E. Taylor. Another member of the committee, A. L. Wilson, was unable to be present.



## OPERATORS FROM

Leaside transmission station were out in force (lower right). Included in this group are: Allen Don Carlos, Jack Jones, Charles Drew, A. E. Kobold, Sid Boucher and Edward Higgins. Another happy group is shown in the lower left illustration.

RECOGNIZED IN the photograph on the left were: Mr. and Mrs. A. J. Payne, Mr. and Mrs. Erwin Wylie, Mr. and Mrs. Ken Easton, Mrs. Roy Taylor, Mr. and Mrs. J. S. Hillier, Harold Hillier, Violet Ormand, Norma Reeve, John Johnston, and Walter Cookson





## SANTA COMES TO TOWN



WHEN Santa Claus and his prancing reindeer, accompanied by a glittering entourage of fairies and familiar folk in their story book settings, paraded past the H.E.P.C. Administration Building on University Avenue, Toronto, Bill Harland of the Commission staff was in the front line with his camera. Shown above are two of his photographic impressions of the parade.

## HARNESSING HORSEPOWER

(Continued on page 15)

If it is proposed to construct an earth dam of an appreciable height, suitable equipment is used to take undisturbed samples of the foundation earth. From these samples it is possible to determine its ability to resist the seepage of water, and to support the structure. To check on the suitability of prospective sources of earth fill for a dam or dyke, samples are sent to the laboratory where they are subjected to a number of tests which reveal such qualities as permeability, shear, density and grading of grain sizes. Of particular importance is the selection of material for the "core" or central watertight portion of large earth dams.

The economic benefits of high quality concrete renders the selection of sand and gravel (or crushed rock) of paramount importance. Sand or gravel deposits within convenient hauling distances are explored. If preliminary

field tests indicate reasonable suitability of a deposit, carefully selected samples taken from test pits are sent to the Commission's laboratory for more exacting tests. Should these prove the material to be satisfactory, the test-pitting is extended to ensure a sufficient quantity for the concrete requirements of the project.

As previously intimated, in the prosecution of the various field investigations, particularly in remote locations, transportation is frequently a major problem. The aeroplane has assisted substantially in overcoming this obstacle. It may be employed to advantage in making a preliminary examination and obtaining a mental picture of the outstanding features of the terrain to be investigated. It is particularly useful in moving equipment and personnel from point to point on the watershed. Reference might be made to a case in point in which an engineer with his assistants, supplies and equipment (including a 17-foot canoe lashed to the pontoons of the 'plane) "hopped" from lake to lake on the watershed. By this means of transportation, a rapid and comprehensive reconnaissance survey was made of the storage possibilities of the upper waters of the river.

## CAIRO BLACKOUT LIFTED

AT El Alamein Monty's men turned the German march on Cairo into a headlong retreat. At this mecca of Egyptian life recently, picturesque lamp-lighters, such as the one shown above, prepared the street lamps when the blackout was lifted.



*Merry Christmas—Happy New Year*



## IN THE BALANCE

(Continued from page 6)

oils, part of an investigation from which it is hoped that methods will be developed for accurately determining when an oil has reached the point where it needs to be reconditioned. Mr. Chisholm explained the studies which have been carried out over a period of years in developing simple methods for restoring badly deteriorated oils to usable condition. The importance of this work is apparent when it is remembered that the Commission's electrical apparatus contains millions of gallons of oil, and on this oil depends the safe functioning of the equipment.

Other investigations described were associated with the hydration of portland cement, the protection of wood poles against ground line decay, the influence of moisture movements in wood on protecting paint films made of different materials, to name only a few of the more recent tests.

The chemical laboratory, while small, is well equipped with all the necessary apparatus for the work it has to do, and its staff of five chemists and technicians have had wide experience and enjoy a high reputation in professional circles.

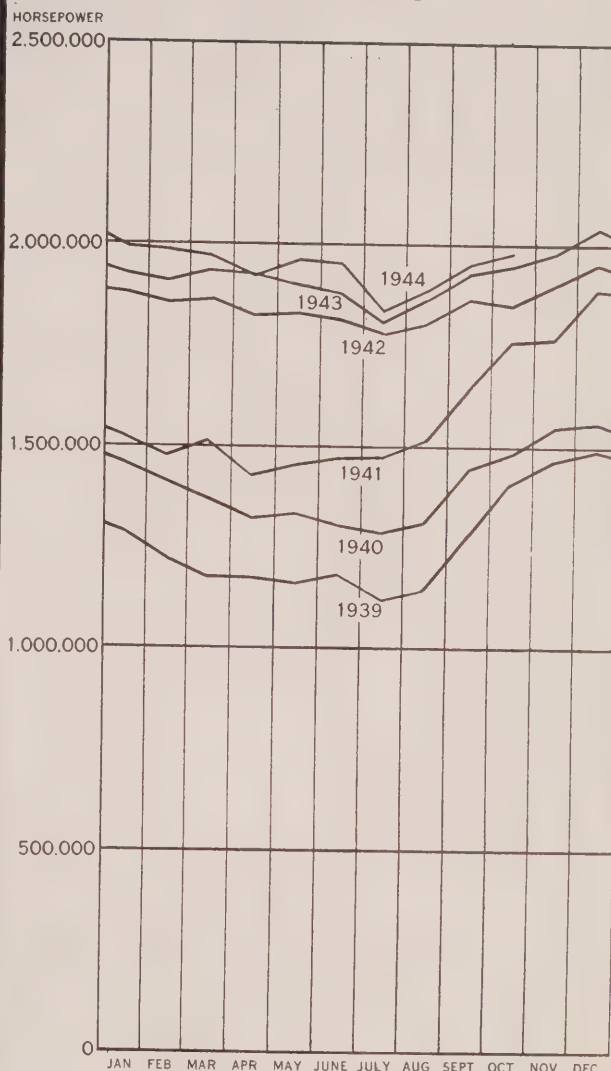
The foregoing brief outline of the equipment used and the work done in the chemical section of the H.E.P.C. laboratories by no means completes the picture, but is intended to give some idea of the diversity and character of the tests which play a vital role in the daily operations of Hydro in this province.



IN THIS picture C. H. Clark is seen examining a sample of oil that has just been taken out of the centrifuge, which makes 2,200 revolutions a minute.

## SOUTHERN ONTARIO SYSTEM EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

### PRIMARY LOAD



### PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	OCTOBER 1944	OCTOBER 1943	
SOUTHERN ONTARIO SYSTEM...	1,981,428	1,946,327	+ 1.8
THUNDER BAY SYSTEM . . . .	122,252	104,129	+ 17.4
NORTHERN ONTARIO PROPERTIES	192,075	184,598	+ 4.1
TOTAL . . . . .	2,295,755	2,235,054	+ 2.7

### PRIMARY AND SECONDARY LOADS

SOUTHERN ONTARIO SYSTEM...	2,043,646	1,972,708	+ 3.6
THUNDER BAY SYSTEM . . . . .	127,212	124,638	+ 2.1
NORTHERN ONTARIO PROPERTIES	245,299	215,429	+ 13.9
TOTAL . . . . .	2,416,157	2,312,775	+ 4.5



# MUNICIPAL LOADS, SEPTEMBER, 1944

## SOUTHERN ONTARIO SYSTEM

### NIAGARA DIVISION

(25-Cycle)

SOUTHERN ONTARIO SYSTEM			Popula- tion		Popula- tion			
NIAGARA DIVISION			H.P.		H.P.			
(25-Cycle)								
	H.P.	Popula- tion	Erieau	215	218	Oil Springs	181	541
			Erie Beach	25	21	Otterville	139	P.V.
			Essex	650	1,886			
Acton	1,684	1,903	Etobicoke Twp.	8,953	V.A.	Palmerston	635	1,400
Agincourt	240	P.V.	Exeter	828	1,654	Paris	1,841	4,604
Ailsa Craig	159	487				Parkhill	233	1,029
Alvinston	117	649	Fergus	1,398	2,759	Petrolia	994	2,768
Amherstburg	1,088	2,704	Fonthill	204	860	Plattsville	141	P.V.
Ancaster Twp.	438	V.A.	Forest	594	1,562	Point Edwards	1,776	1,199
Arkona	62	403	Forest Hill	7,361	12,172	Port Colborne	1,436	6,928
Aurora	1,443	2,821				Port Credit	960	1,934
Aylmer	902	1,985	Galt	11,247	15,126	Port Dalhousie	1,043	1,599
Ayr	255	760	Georgetown	1,871	2,452	Port Dover	561	1,790
			Glencoe	213	763	Port Rowan	103	700
Baden	611	P.V.	Goderich	1,798	4,674	Port Stanley	1,013	824
Beachville	753	P.V.	Granton	79	P.V.	Preston	4,120	6,656
Beamsville	482	1,227	Grimsby	1,014	1,988	Princeton	155	P.V.
Belle River	210	836	Guelph	11,943	23,074			
Blenheim	566	1,873				Queenston	158	P.V.
Blyth	141	662	Hagersville	1,198	1,524			
Bolton	228	629	Hamilton	155,951	164,719	Richmond Hill	547	1,295
Bothwell	138	683	Harriston	535	1,292	Ridgetown	668	1,986
Brampton	2,995	6,157	Harrow	727	1,092	Riverside	1,218	5,235
Brantford	21,891	31,622	Hensall	199	686	Rockwood	159	P.V.
Brantford Twp.	1,281	V.A.	Hespeler	2,811	2,938	Rodney	140	758
Bridgeport	153	P.V.	Highgate	80	322			
Brigden	93	P.V.	Humberstone	600	2,831	St. Catharines	29,343	34,541
Brussels	144	784				St. Clair Beach	120	138
Burford	293	P.V.	Ingersoll	3,319	5,757	St. George	175	P.V.
Burgessville	54	P.V.	Jarvis	190	513	St. Jacobs	359	P.V.
Burlington	1,723	3,925	Kingsville	578	2,453	St. Marys	1,723	4,009
Burlington Beach	478	1,474	Kitchener	28,874	35,465	St. Thomas	8,373	17,045
						Sarnia	12,055	18,599
Caledonia	352	1,430	Lambeth	123	P.V.	Scarborough Twp.	4,984	V.A.
Campbellville	43	P.V.	LaSalle	300	907	Seaforth	1,057	1,782
Cayuga	132	700	Leamington	2,335	6,048	Simcoe	3,016	6,304
Chatham	7,063	17,184	Listowel	1,607	2,984	Smithville	169	P.V.
Chippawa	358	1,228	London	42,568	81,567	Springfield	73	382
Clifford	107	491	London Twp.	564	V.A.	Stamford Twp.	3,131	8,275
Clinton	810	1,879	Long Branch	1,340	4,258	Stoney Creek	232	933
Comber	134	P.V.	Lucan	211	643	Stouffville	376	1,198
Cottam	71	P.V.	Lynden	114	P.V.	Stratford	8,249	17,163
Courtright	52	355				Strathroy	1,710	2,834
			Markham	422	1,175	Streetsville	253	701
Dashwood	139	P.V.	Merlin	75	P.V.	Sutton	404	949
Delaware	75	P.V.	Merritton	11,464	2,916	Swansea	3,064	6,907
Delhi	445	2,430	Milton	1,546	1,915			
Dorchester	113	P.V.	Milverton	398	994	Tavistock	750	1,080
Drayton	157	528	Mimico	2,825	8,785	Tecumseh	526	2,391
Dresden	477	1,525	Mitchell	766	1,670	Thamesford	245	P.V.
Drumbo	126	P.V.	Moorefield	51	P.V.	Thamesville	191	816
Dublin	48	P.V.	Mount Brydges	103	P.V.	Thedford	120	598
Dundas	3,150	5,245				Thorndale	101	P.V.
Dunnville	1,486	3,916	Newbury	38	288	Thorold	2,563	5,284
Dutton	238	830	New Hamburg	726	1,441	Tilbury	1,491	1,923
			Newmarket	2,080	3,800	Tillsonburg	1,446	4,602
East York Twp.	9,324	41,578	New Toronto	12,556	9,469	Toronto	357,534	657,612
Elmira	1,470	2,069	Niagara Falls	10,895	20,371	Toronto Twp.	3,601	V.A.
Elora	489	1,185	Niagara-on-the-Lake	1,010	1,764			
Embro	176	420	North York Twp.	10,630	V.A.			
			Norwich	498	1,301			

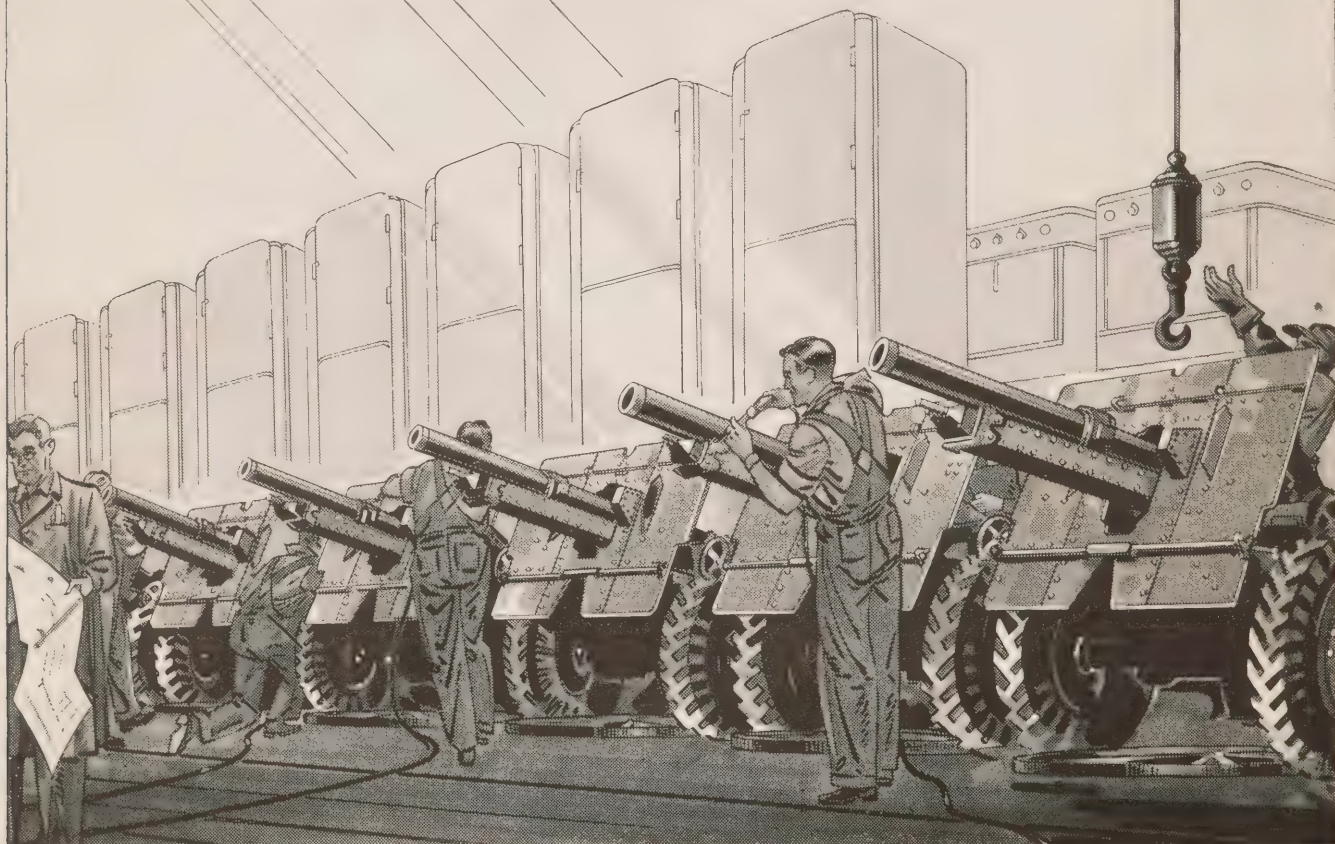


## MUNICIPAL LOADS, SEPTEMBER, 1944

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Wallaceburg -----	4,560	4,802	Neustadt -----	45	431	Lakefield -----	491	1,301
Wardsville -----	39	221	Orangeville -----	766	2,558	Lanark -----	89	686
Waterdown -----	276	867	Owen Sound -----	6,221	13,559	Lancaster -----	54	570
Waterford -----	485	1,294	Paisley -----	112	530	Lindsay -----	3,753	8,345
Waterloo -----	6,592	8,968	Penetanguishene --	1,044	4,177	Madoc -----	228	1,130
Watford -----	425	1,023	Port Carling -----	249	520	Marmara -----	124	1,004
Welland -----	12,049	14,899	Port Elgin -----	551	1,415	Martintown -----	39	P.V.
Wellesley -----	140	P.V.	Port McNicoll -----	95	950	Maxville -----	106	811
West Lorne -----	235	768	Port Perry -----	326	1,175	Millbrook -----	113	749
Weston -----	5,054	6,333	Priceville -----	10	P.V.	Morrisburg -----	318	1,484
Wheatley -----	210	761	Ripley -----	108	420	Napanee -----	1,561	3,241
Windsor -----	52,800	118,040	Rosseau -----	52	305	Newcastle -----	176	701
Woodbridge -----	663	1,100	Shelburne -----	256	1,053	Norwood -----	148	710
Woodstock -----	8,833	12,339	Southampton -----	626	1,467	Omeme -----	195	630
Wyoming -----	77	538	Stayner -----	309	1,106	Orono -----	102	P.V.
York Twp. -----	21,467	77,175	Sunderland -----	84	P.V.	Oshawa -----	18,014	26,610
Zurich -----	146	P.V.	Tara -----	129	510	Ottawa -----	38,705	150,816
(66% Cycle)			Teeswater -----	160	973	Perth -----	1,934	4,187
Bronte -----	189	P.V.	Thornton -----	31	P.V.	Peterborough -----	13,100	24,977
Oakville -----	1,424	3,369	Tottenham -----	106	532	Picton -----	1,438	3,400
Trafalgar Twp. -----	660	V.A.	Uxbridge -----	361	1,480	Port Hope -----	2,654	4,997
GEORGIAN BAY DIVISION			Victoria Harbour --	67	979	Prescott -----	1,565	3,318
(60-Cycle)			Walkerton -----	1,144	2,534	Richmond -----	86	428
Alliston -----	419	1,700	Waubauskene -----	142	P.V.	Russell -----	93	P.V.
Arthur -----	166	1,089	Warton -----	298	1,750	Smiths Falls -----	3,191	7,741
Bala -----	258	355	Windermere -----	83	117	Stirling -----	356	947
Barrie -----	4,422	9,599	Wingham -----	775	2,149	Trenton -----	5,273	8,183
Beaverton -----	290	941	Woodville -----	71	439	Tweed -----	292	1,181
Beeton -----	81	617	EASTERN ONTARIO DIVISION			Warkworth -----	77	P.V.
Bradford -----	251	1,041	(60-Cycle)			Wellington -----	464	948
Brechin -----	53	P.V.	Alexandria -----	210	1,976	Westport -----	111	725
Cannington -----	271	761	Apple Hill -----	31	P.V.	Whitby -----	1,614	4,236
Chatsworth -----	86	333	Arnprior -----	1,276	4,019	Williamsburg -----	96	P.V.
Chesley -----	617	1,812	Athens -----	129	626	Winchester -----	430	1,017
Coldwater -----	192	545	Bath -----	49	325	THUNDER BAY SYSTEM		
Collingwood -----	2,907	6,249	Belleville -----	8,223	15,498	(60-Cycle)		
Cookstown -----	111	P.V.	Bloomfield -----	171	636	Fort William -----	15,555	30,370
Creemore -----	163	661	Bowmanville -----	2,749	3,850	Nipigon Twp. -----	248	V.A.
Dundalk -----	210	686	Brighton -----	522	1,462	Port Arthur -----	24,492	24,217
Durham -----	437	1,874	Brockville -----	5,108	11,112	NORTHERN ONTARIO		
Elmvale -----	168	P.V.	Cardinal -----	418	1,602	PROPERTIES		
Elmwood -----	66	P.V.	Carleton Place -----	1,992	4,143	Nipissing District		
Flesherton -----	67	452	Chesterville -----	338	1,094	(60-Cycle)		
Grand Valley -----	174	645	Cobden -----	128	643	North Bay -----	5,050	16,013
Gravenhurst -----	1,310	2,261	Cobourg -----	2,387	5,907	Patricia District		
Hanover -----	1,410	3,190	Colborne -----	230	960	(60-Cycle)		
Holstein -----	18	P.V.	Deseronto -----	277	1,002	Sioux Lookout -----	300	1,967
Huntsville -----	1,298	2,943	Finch -----	106	396	Sudbury District		
Kincardine -----	838	2,483	Frankford -----	180	1,095	(60-Cycle)		
Kirkfield -----	25	P.V.	Hastings -----	129	823	Capreol -----	247	1,660
Lucknow -----	404	856	Havelock -----	137	1,103	Sudbury -----	9,824	36,724
MacTier -----	128	V.A.	Iroquois -----	278	1,123			
Markdale -----	188	776	Kempville -----	369	1,230			
Meaford -----	708	2,759	Kingston -----	16,033	29,545			
Midland -----	4,984	6,754						
Mildmay -----	136	764						
Mount Forest -----	531	1,936						



# HYDRO Lightens the way



## Invisible Servant . . . in WAR . . . in PEACE!

● Silently . . . tirelessly . . . day and night . . . electricity serves, at the flip of a switch.

Throughout Ontario, Hydro power implements production miracles, keeps machines operating at maximum capacity.

Hydro, created and operated to supply adequate low-cost electricity to improve our way of living in normal times, has enabled Ontario's industries to meet the war emergency. In the race between production and disaster, Ontario and your Hydro have kept abreast of the war needs. It will be thus until the day of Victory. Then, Hydro's main effort will once again be directed to its peacetime service of helping industry produce the work-saving, time-saving, pleasure-giving conveniences that make for better living in the home and on the farm.

Meanwhile, the same determination of the people, the same qualities of courage, patience and self-discipline which created and expanded Hydro are still needed to see the war through. The Peace, so nearly won, must not be jeopardized by public complacency and over-confidence.

With our eyes fixed upon unconditional surrender of the enemy . . . let us go forward . . . willingly doing without when necessary . . . to bring victory sooner . . . to assure a lasting peace . . . when you may again enjoy a fuller use of Hydro . . . your invisible, low-cost, servant.

THE HYDRO-ELECTRIC  
POWER COMMISSION  
OF ONTARIO



















Gov.Doc  
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Ontario. Hydro-Electric Power Commission

Hydro news.

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